DISCOVER-AQ FORECAST SUMMARY **February 3, 2013**

AQ Discussion Summary PM2.5 continues to build in the SJV and is expected to build through Tuesday. Levels have surpassed the previous highs around January 20th for some sites already. Corcoran had the highest levels again overnight. There shouldn't be a "clean-out" event of the SJV until Wednesday or Thursday.

Meteorology Summary

Monday SJV – SJV region forecast to be cloud-free throughout the day. Cloud models and Hanford NWS forecaster agree. Fog will likely be an issue in the morning, similar to this morning - with high relative humidities and light winds (the GEM and GEOS5 models clearly show morning fog in the SJV). High clouds move in to the northern SJV by late afternoon (4-5 pm) and overnight.

Tuesday SJV – Cloud models show high level clouds moving into the SJV from the north, with cirrus covering the entire valley by late afternoon. Clouds forecast to be >25 Kft. Fog again likely to be an issue in the morning. **PODEX (LA)** – Low level clouds remain off the coast of LA. Cirrus forecast to be in the area during early morning, but dries out by mid-morning. However, the NWS forecaster (Oxnard) says that cirrus may remain in afternoon.

Wednesday SJV – SJV region forecast to be cloud-free throughout most of the day with high level clouds moving in by late afternoon. Fog could still be a concern, but is not expected to be as widespread as this morning. **PODEX (SF or LA):** Main low level cloud deck has moved south of the study region, with some low clouds remaining near LA. The models also keep the coast & waters offshore of SF and LA cirrus-free.

Thursday until end of week SJV – Clouds again move into the SJV, with the possibility of precipitation Thursday and Friday, as a trough moves offshore. Precipitation forecast highly uncertain. Clouds may remain into the weekend as the trough moves onshore and weakens.

DISCOVER-AQ / PODEX
Forecast Briefing

February 3, 2013

Clare Flynn
Bryan Duncan

Fresno

TODAY	TONIGHT	FRIDAY	FRIDAY NIGHT	SATURDAY	SATURDAY NIGHT	SUNDAY	SUNDAY NIGHT	MONDAY
								
Areas Fog High: 63 °F	Areas Fog Low: 42 °F	Areas Fog High: 66 °F	Areas Fog Low: 45 °F	Areas Fog High: 67 °F	Areas Fog Low: 46 °F	Areas Fog High: 64 °F	Partly Cloudy Low: 46 °F	Mostly Sunny High: 65 °F

Bakersfield

TODAY	TONIGHT	MONDAY	MONDAY NIGHT	TUESDAY	TUESDAY NIGHT	WEDNESDAY	WEDNESDAY NIGHT	THURSDAY
								
Decreasing Clouds High: 62 °F	Mostly Clear Low: 44 °F	Sunny High: 63 °F	Partly Cloudy Low: 43 °F	Mostly Sunny High: 62 °F	Mostly Clear Low: 42 °F	Mostly Sunny High: 60 °F	Partly Cloudy Low: 40 °F	Mostly Sunny High: 61 °F

Monterey

TODAY	TONIGHT	MONDAY	MONDAY NIGHT	TUESDAY	TUESDAY NIGHT	WEDNESDAY	WEDNESDAY NIGHT	THURSDAY
								
Patchy Fog High: 54 °F	Patchy Fog Low: 43 °F	Patchy Fog High: 55 °F	Increasing Clouds Low: 44 °F	Mostly Sunny High: 56 °F	Partly Cloudy Low: 46 °F	Sunny High: 53 °F	Partly Cloudy Low: 46 °F	Chance Rain High: 51 °F

Palmdale

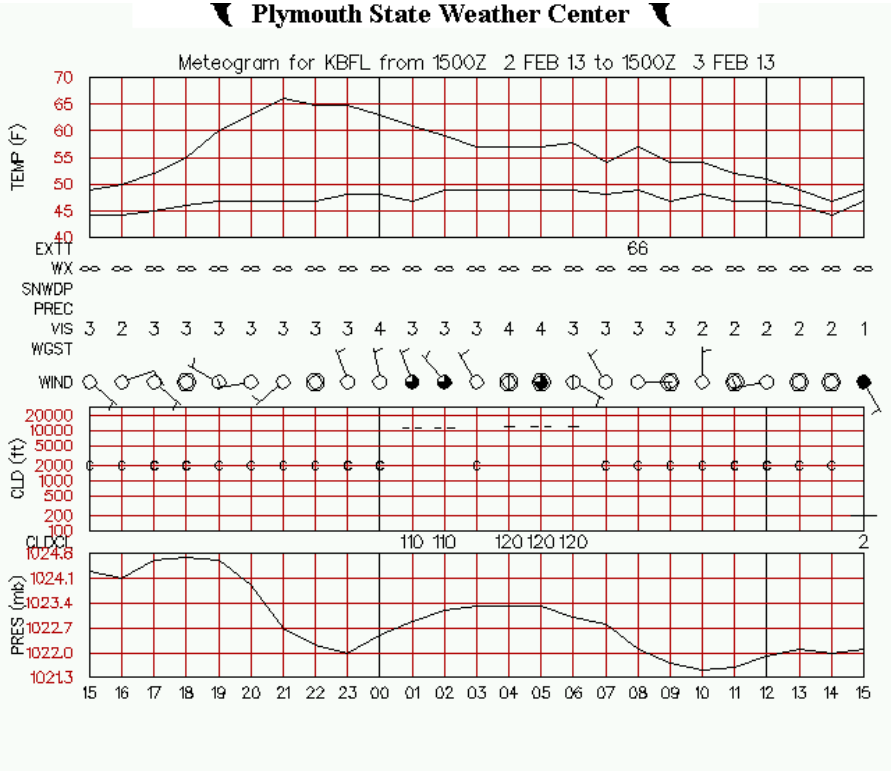
TODAY	TONIGHT	MONDAY	MONDAY NIGHT	TUESDAY	TUESDAY NIGHT	WEDNESDAY	WEDNESDAY NIGHT	THURSDAY
								
Mostly Sunny High: 67 °F	Mostly Clear Low: 41 °F	Sunny High: 69 °F	Mostly Clear Low: 42 °F	Mostly Sunny High: 65 °F	Partly Cloudy Low: 42 °F	Mostly Sunny High: 63 °F	Mostly Cloudy Low: 42 °F	Partly Sunny High: 61 °F

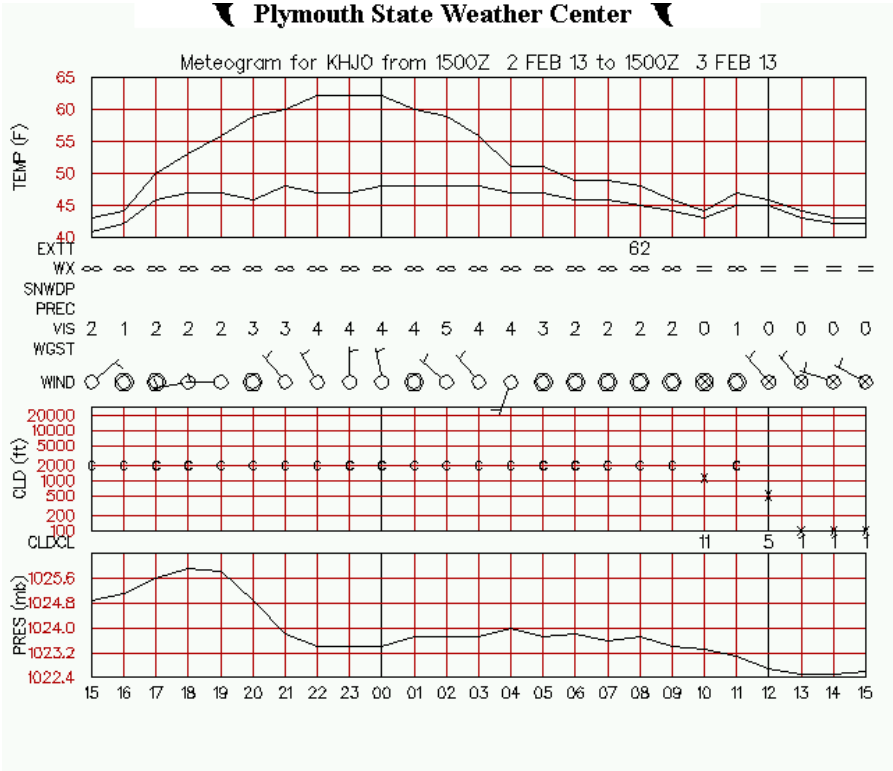
Current Conditions

DENSE FOG ADVISORY until 10am PST (may have impacted current obs.)

Bakersfield : FOG

Hanford : FOG





Current Conditions

FRESNO CA

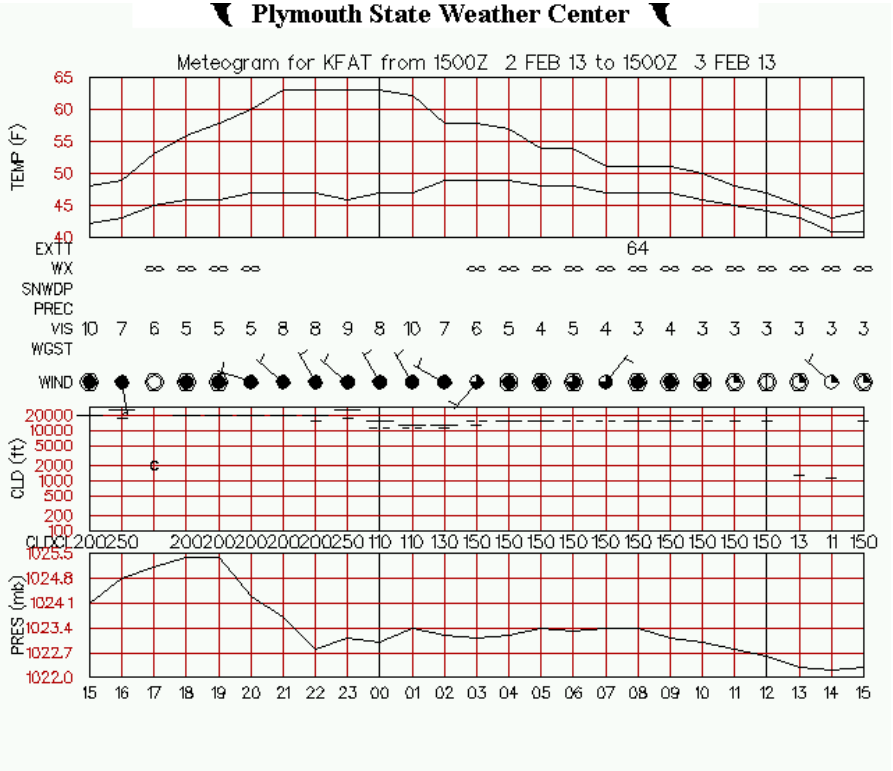
Fog

46°F

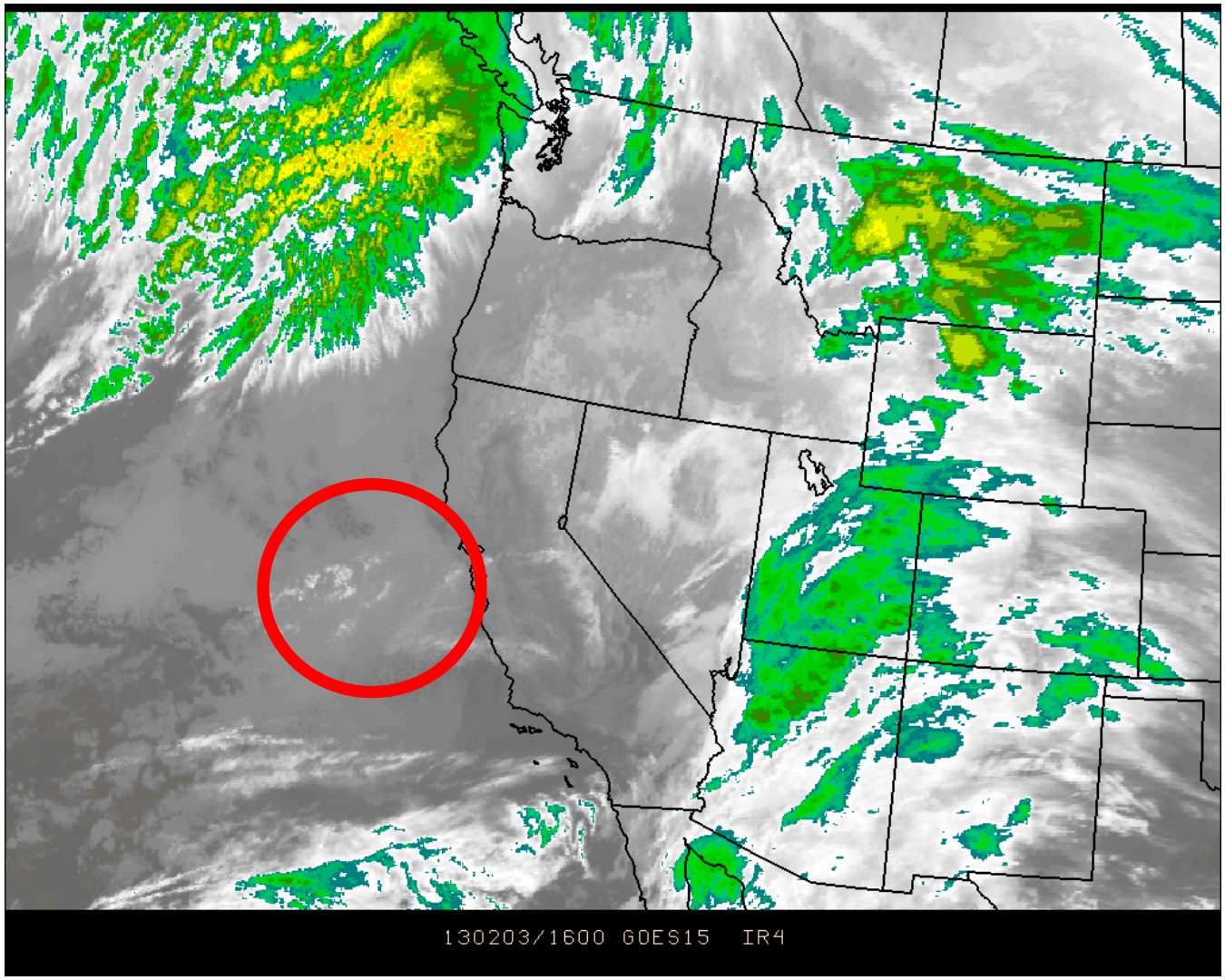
8°C

Humidity	87%
Wind Speed	WNW 7 MPH
Barometer	30.21 in
Dewpoint	43°F (6°C)
Visibility	0.25 mi
Wind Chill	42°F (6°C)

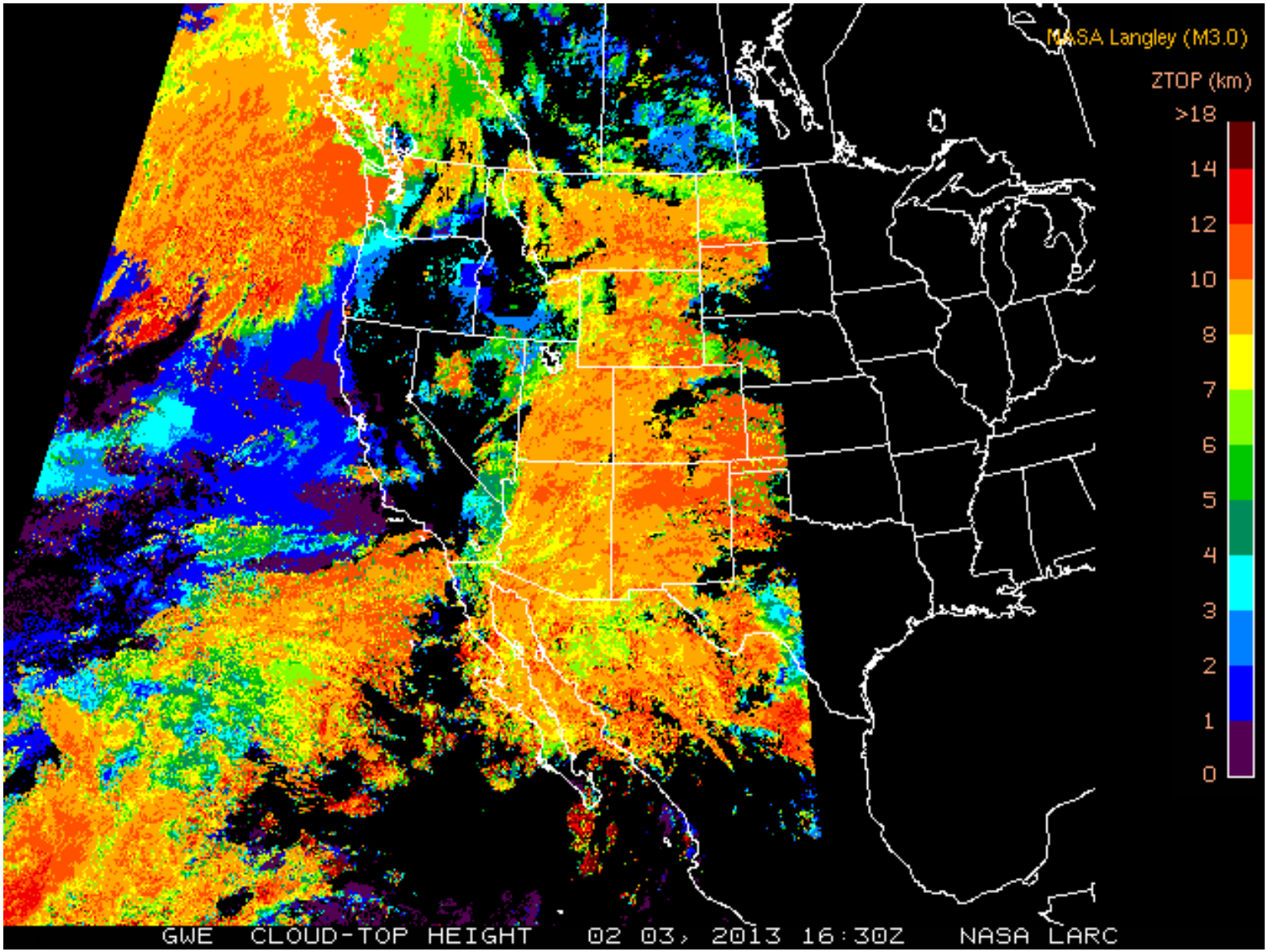
Last Update on 03 Feb 8:00 am PST



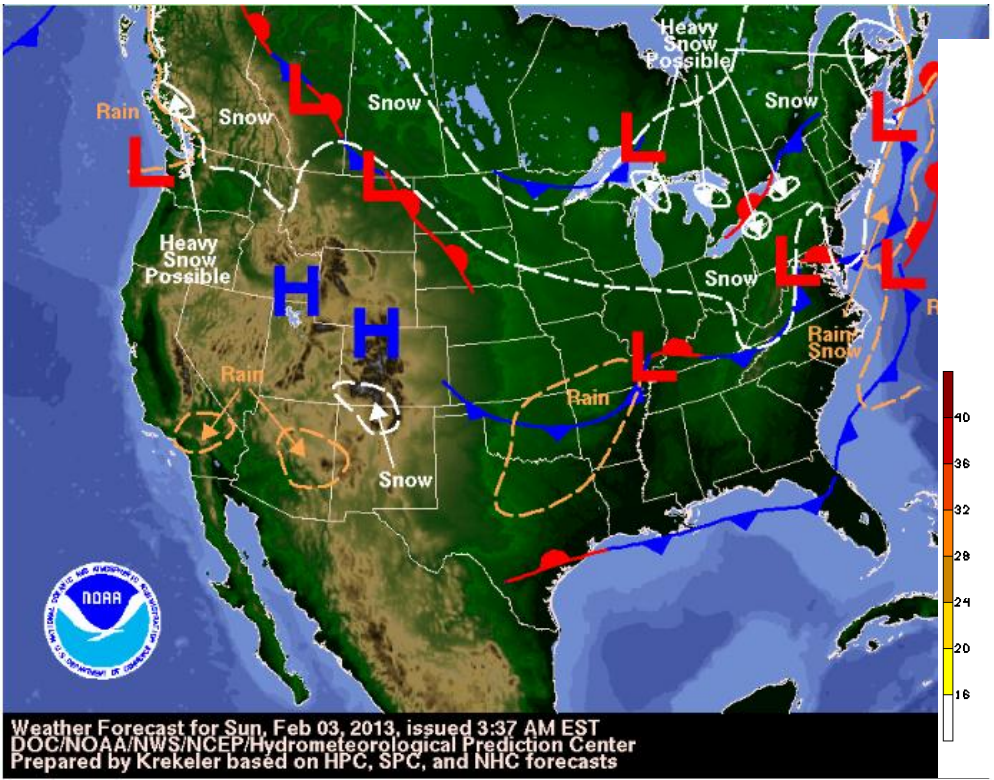
GOES: IR at 1600 UTC (8 am) Today

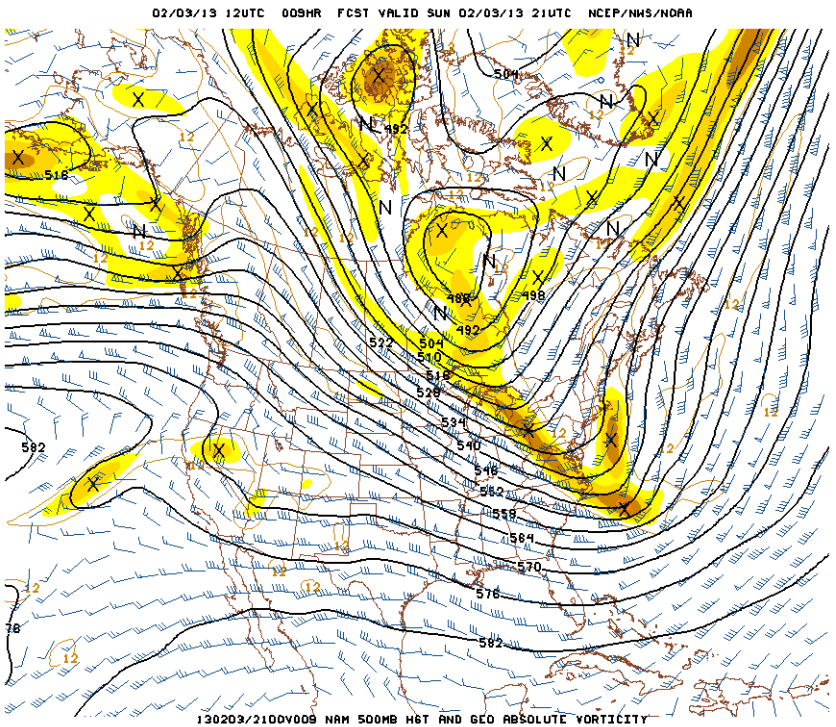


GOES: Cloud Top Height at 1630 UTC (8:30 am) Today

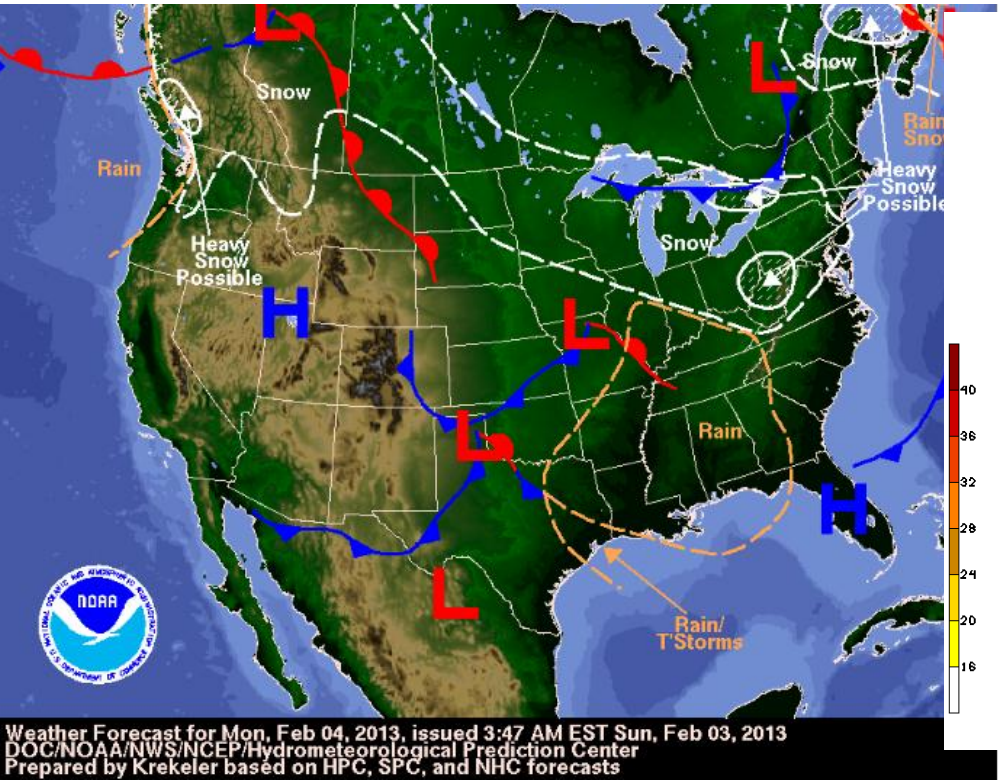


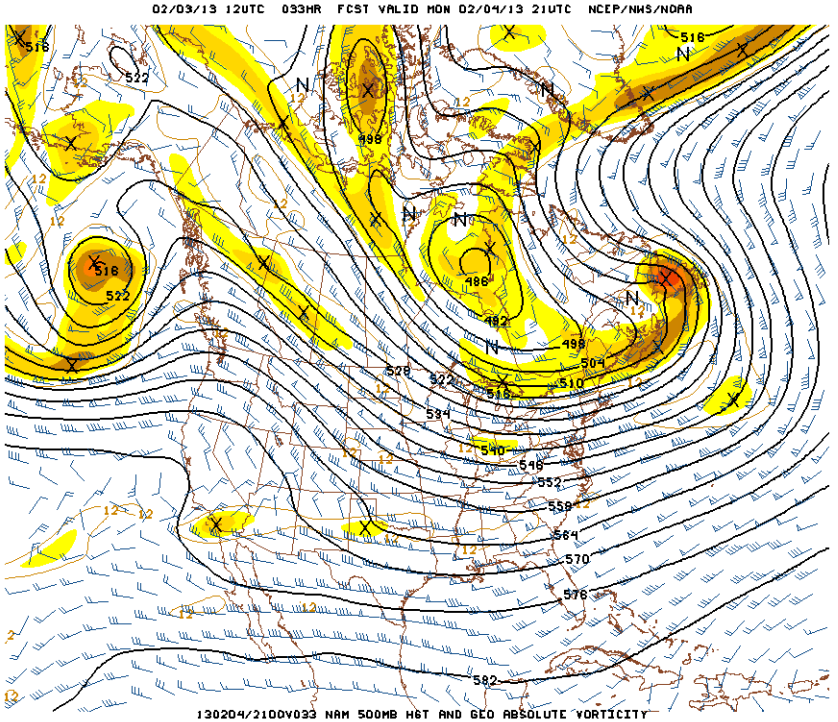
Today: Clouds move east and out of the SJV. Ridge builds into the area later today and into Monday.





Tomorrow (Monday): Ridge continues to build into central CA, allowing for sunny skies and few clouds.



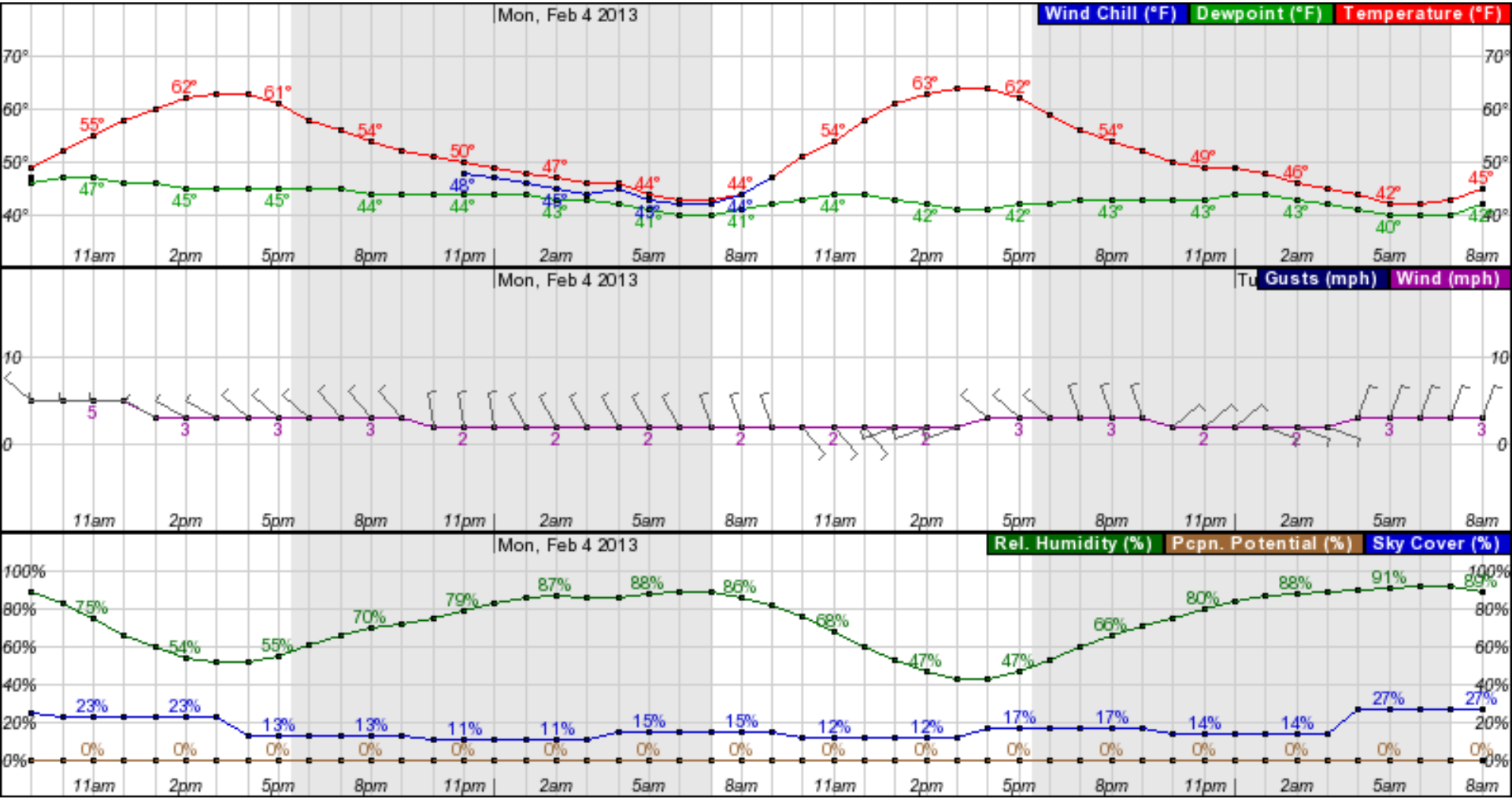


Fresno

Today: Sunny

Monday: Minimal cloud cover

Today → **Monday →**

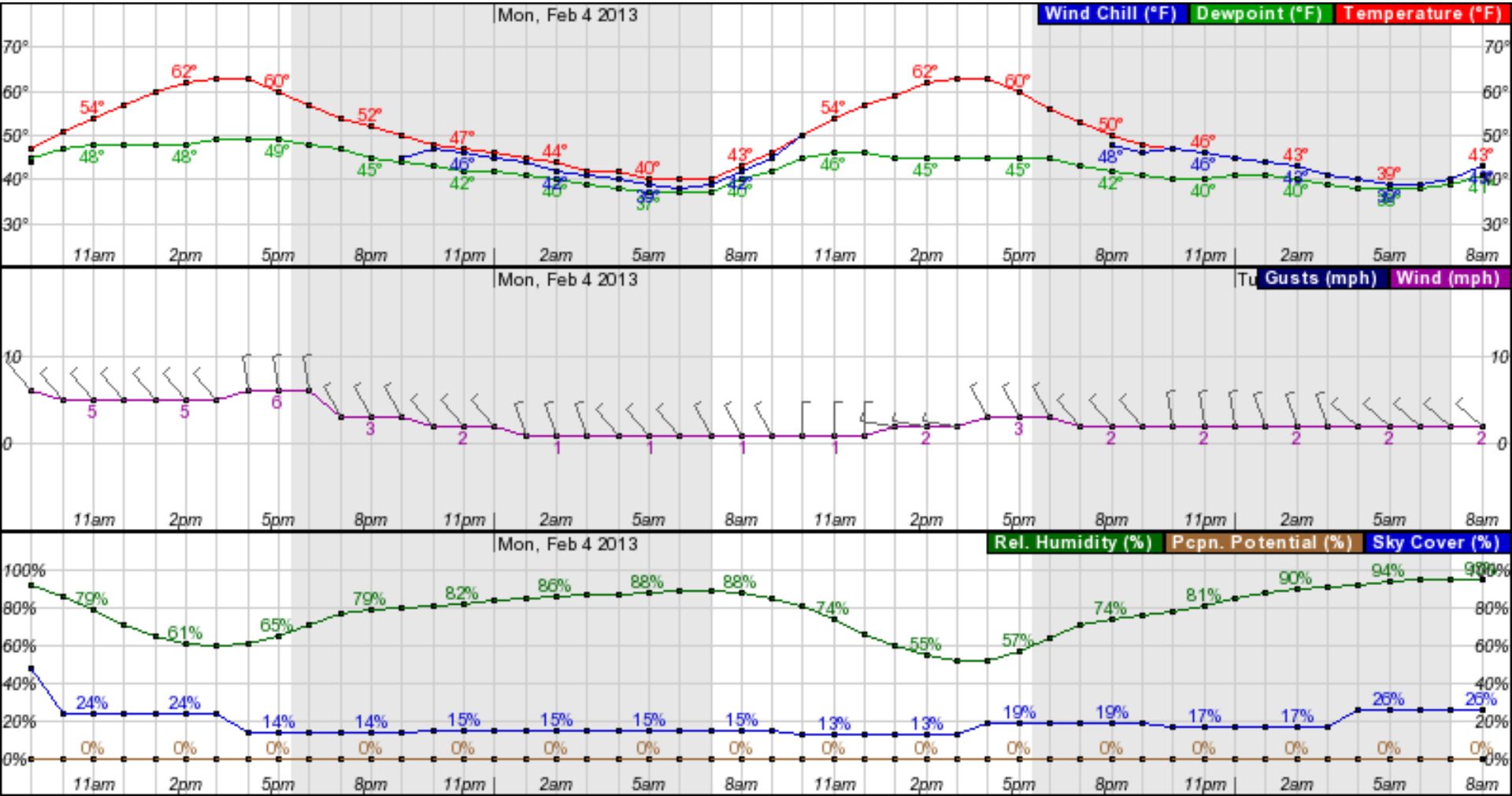


Hanford

Today: Sunny

Monday: Minimal cloud cover

Today → **Monday→**

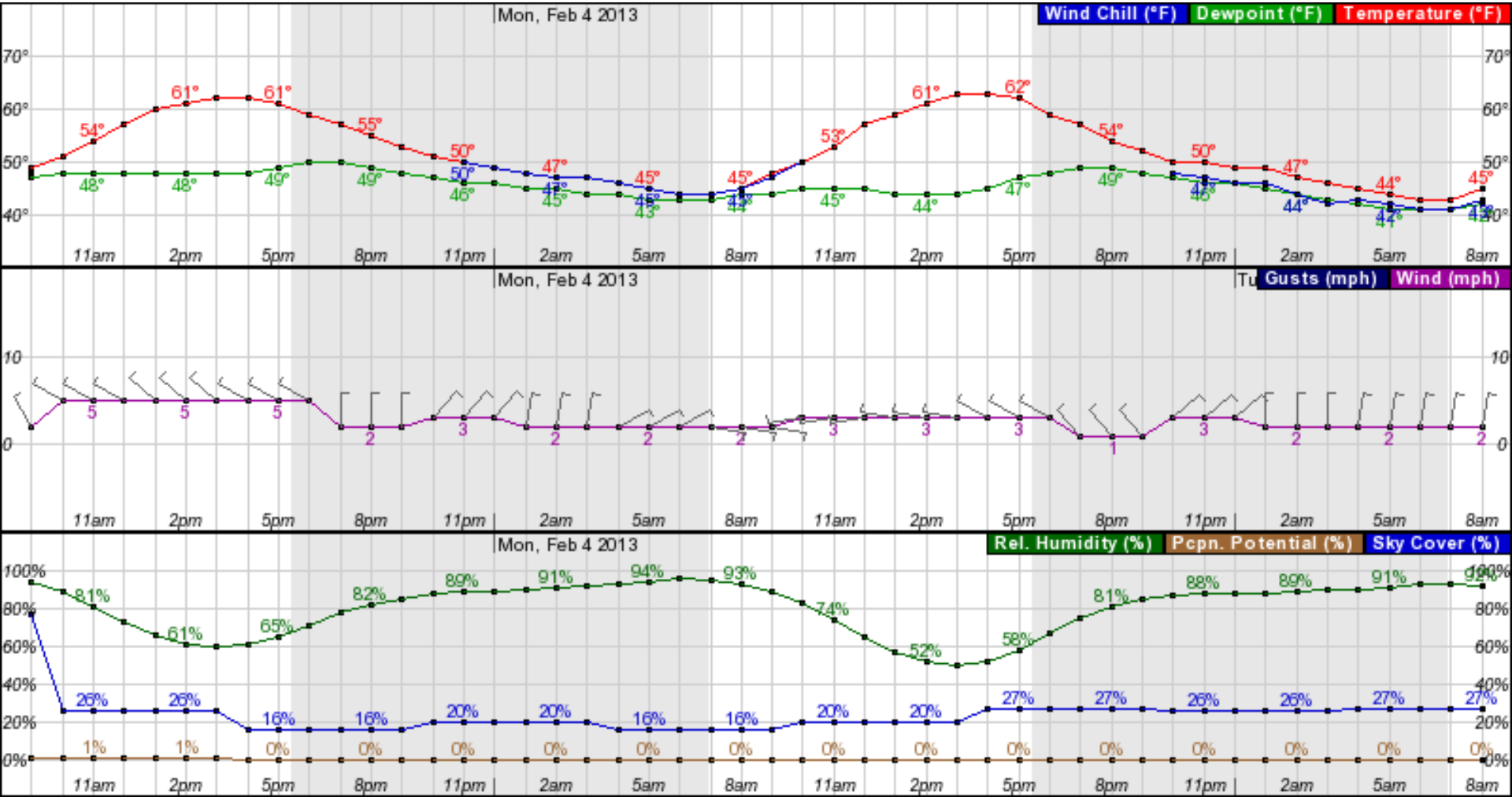


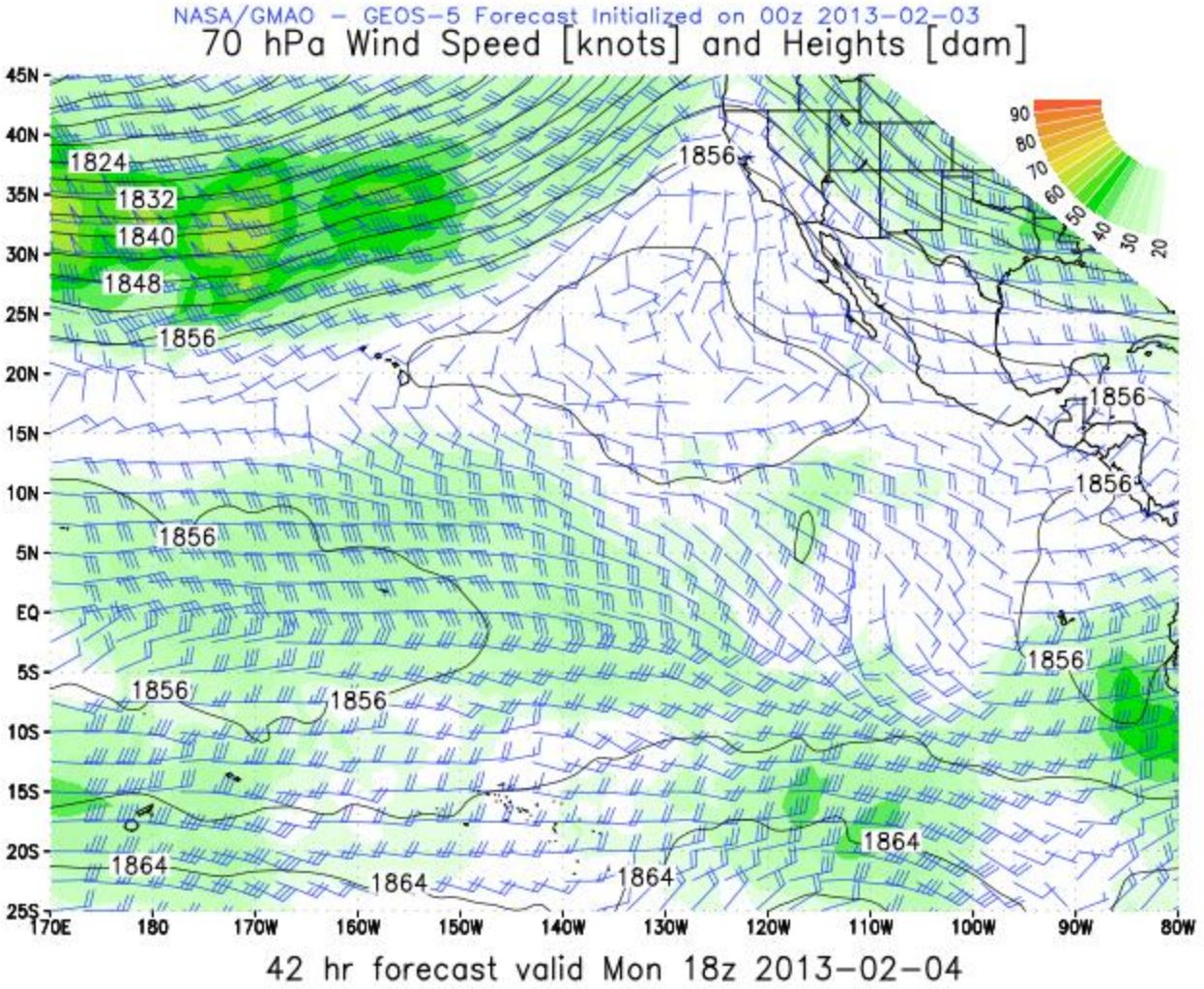
Bakersfield

Today: Sunny

Monday: Minimal cloud cover

Today → **Monday →**




NASA/GMAO – GEOS-5 Forecast Initialized on 00z 2013-02-03
70 hPa Wind Speed [knots] and Heights [dam]
90
80
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60
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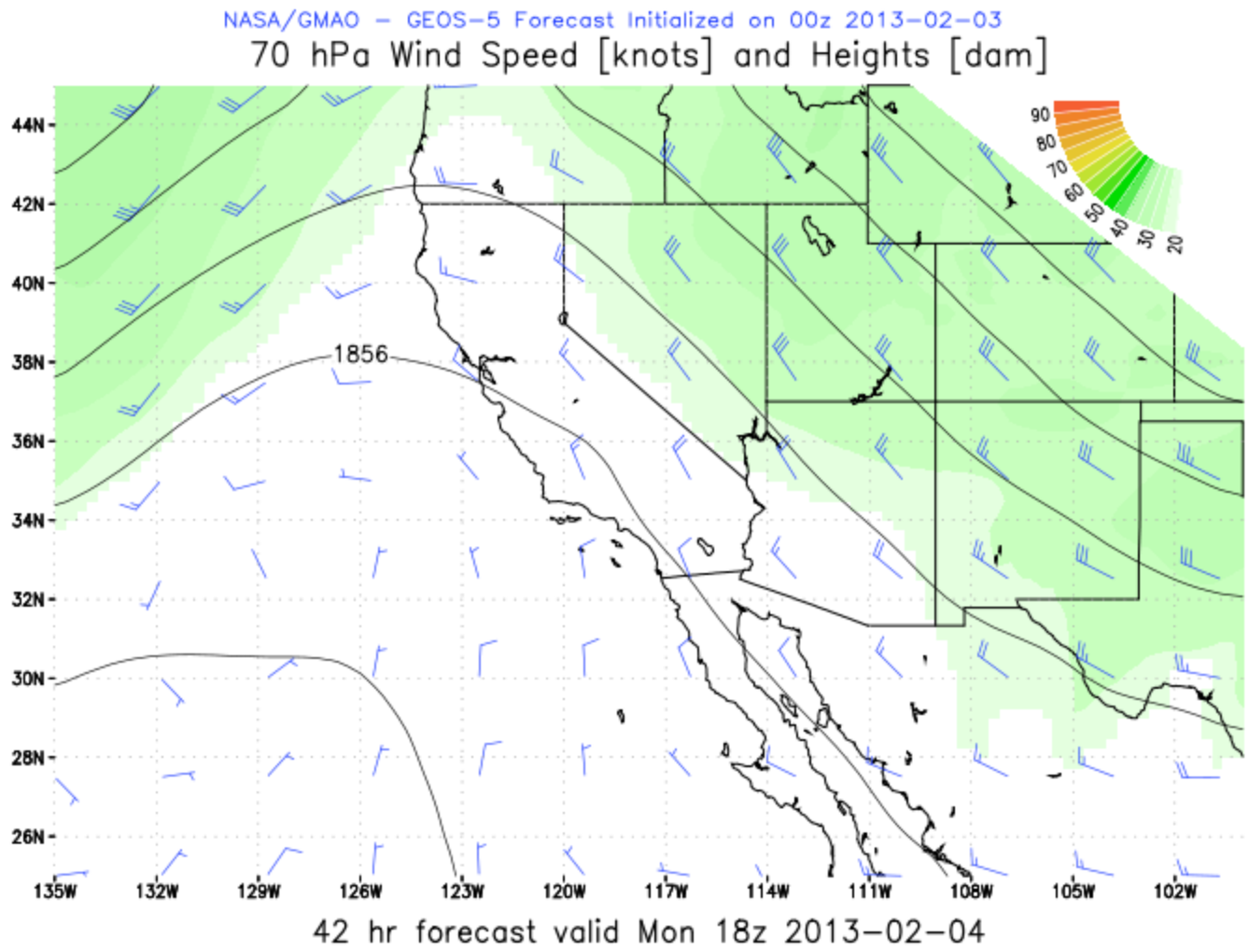
90W
80W
42 hr forecast valid Mon 18z 2013-02-04


NASA/GMAO – GEOS-5 Forecast Initialized on 00z 2013-02-03
70 hPa Wind Speed [knots] and Heights [dam]
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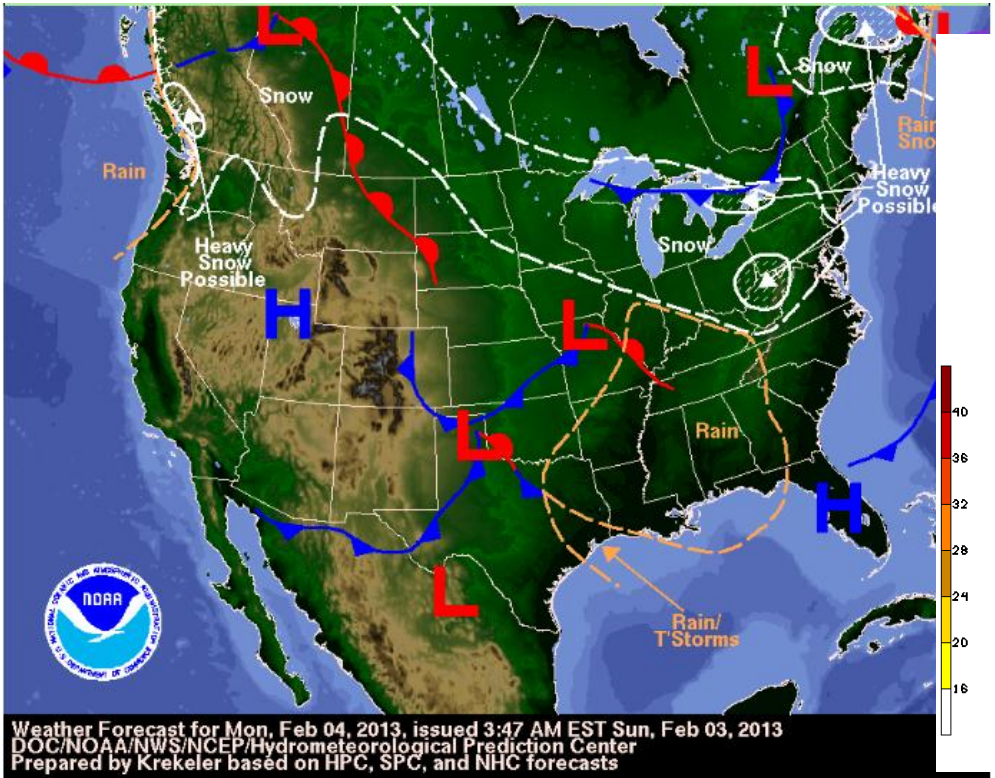
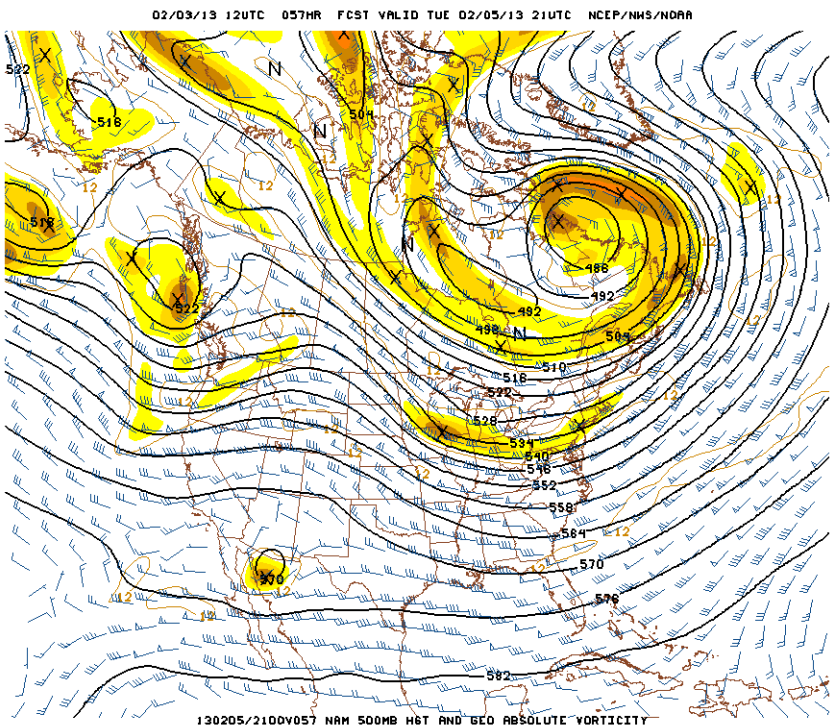
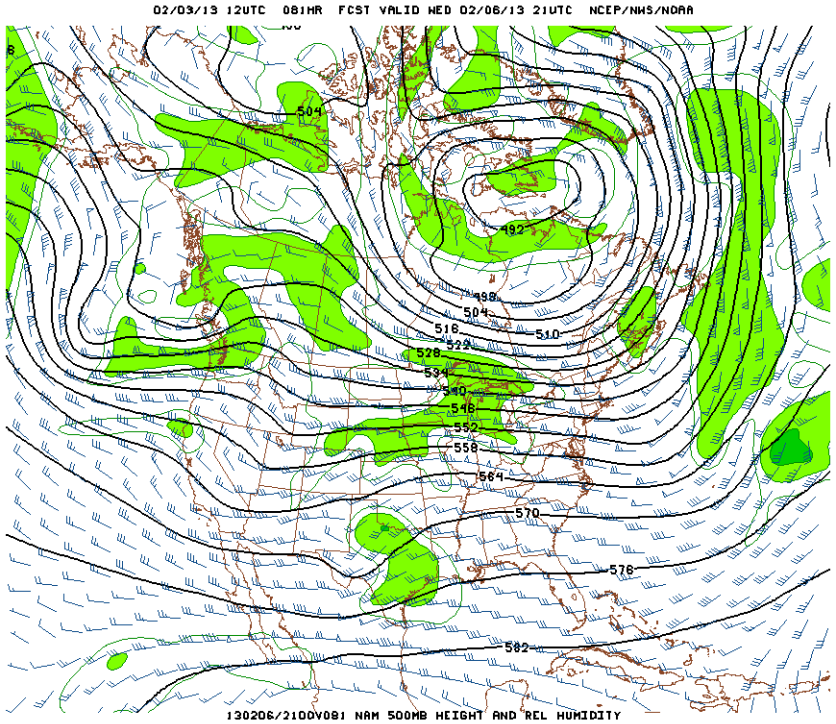
1856
44N
42N
40N
38N
36N
34N
32N
30N
28N
26N
135W
132W
129W
126W
123W
120W
117W
114W
111W
108W
105W
102W
42 hr forecast valid Mon 18z 2013-02-04

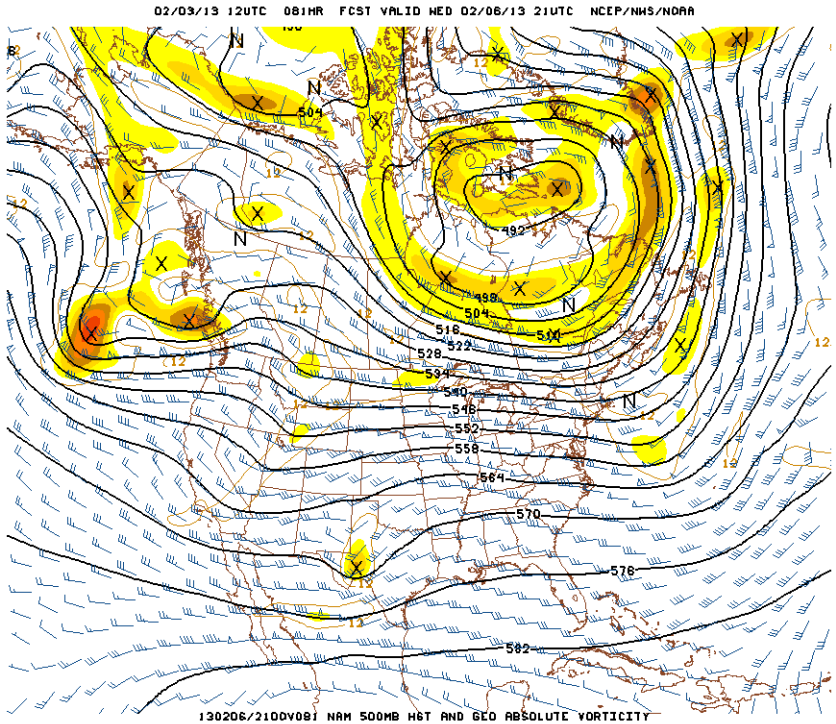
Tuesday: A weak shortwave trough moves through the Pacific Northwest/northern CA, allowing cloud development.





Wednesday: A zonal or slightly ridged flow dominates central CA. This flow patterns brings behind it a trough system that may produce precipitation later in the week.



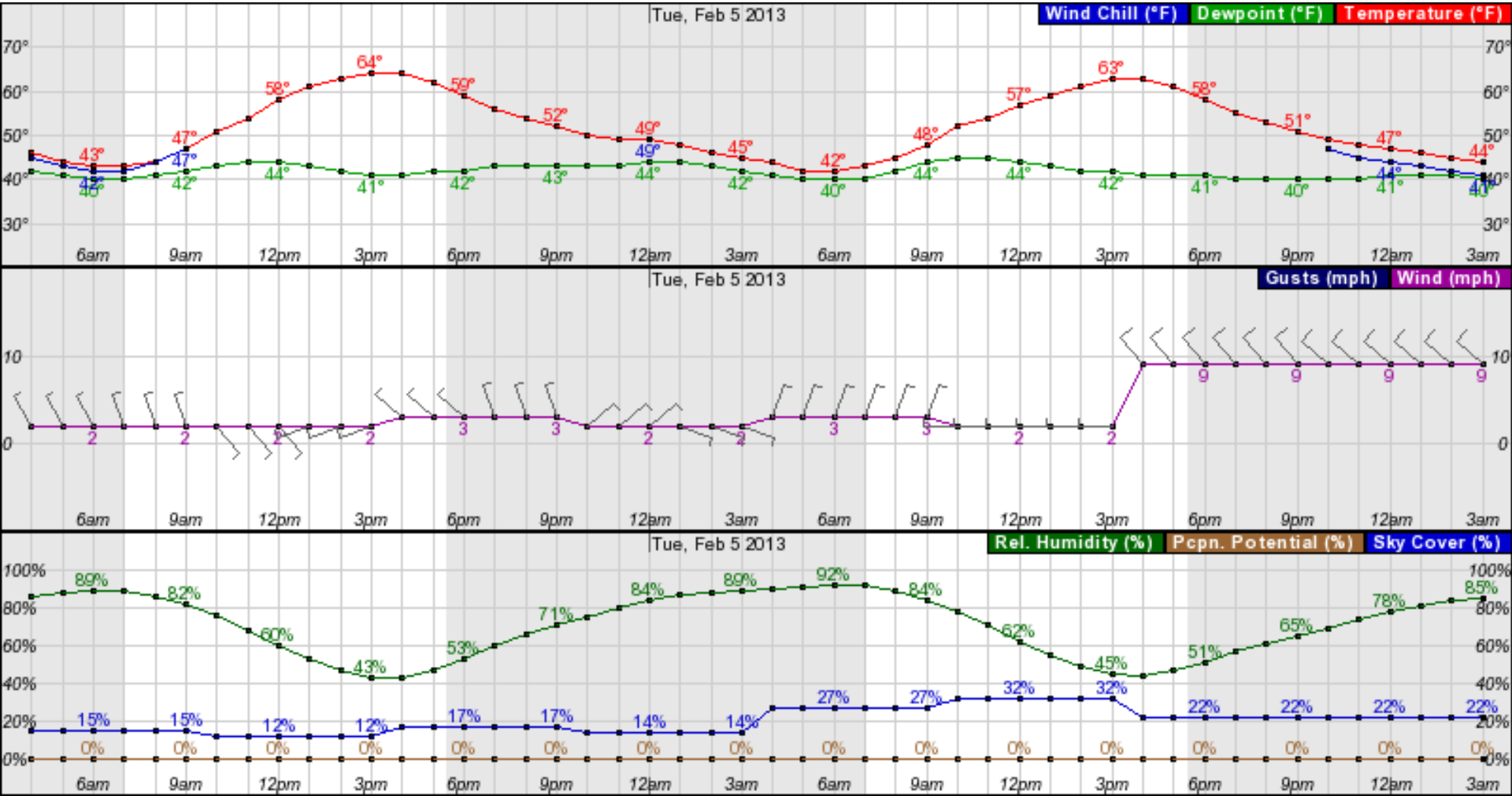


Fresno

Monday: Minimal cloud cover

Tuesday: Clouds increasing, cloud cover ~32%

Monday → **Tuesday →**

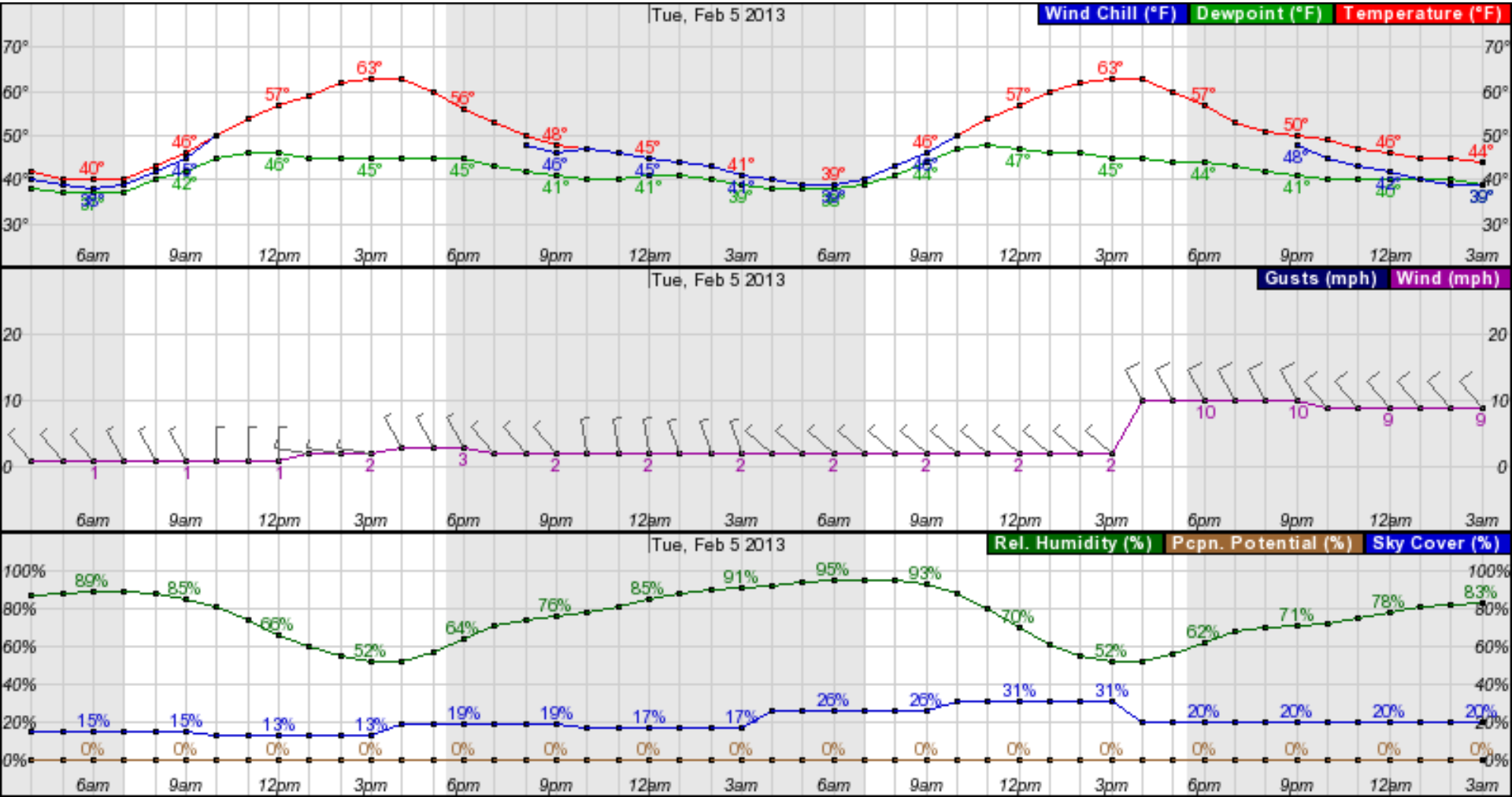


Hanford

Monday: Minimal cloud cover

Tuesday: Clouds increasing, cloud cover ~31%

Monday → **Tuesday →**



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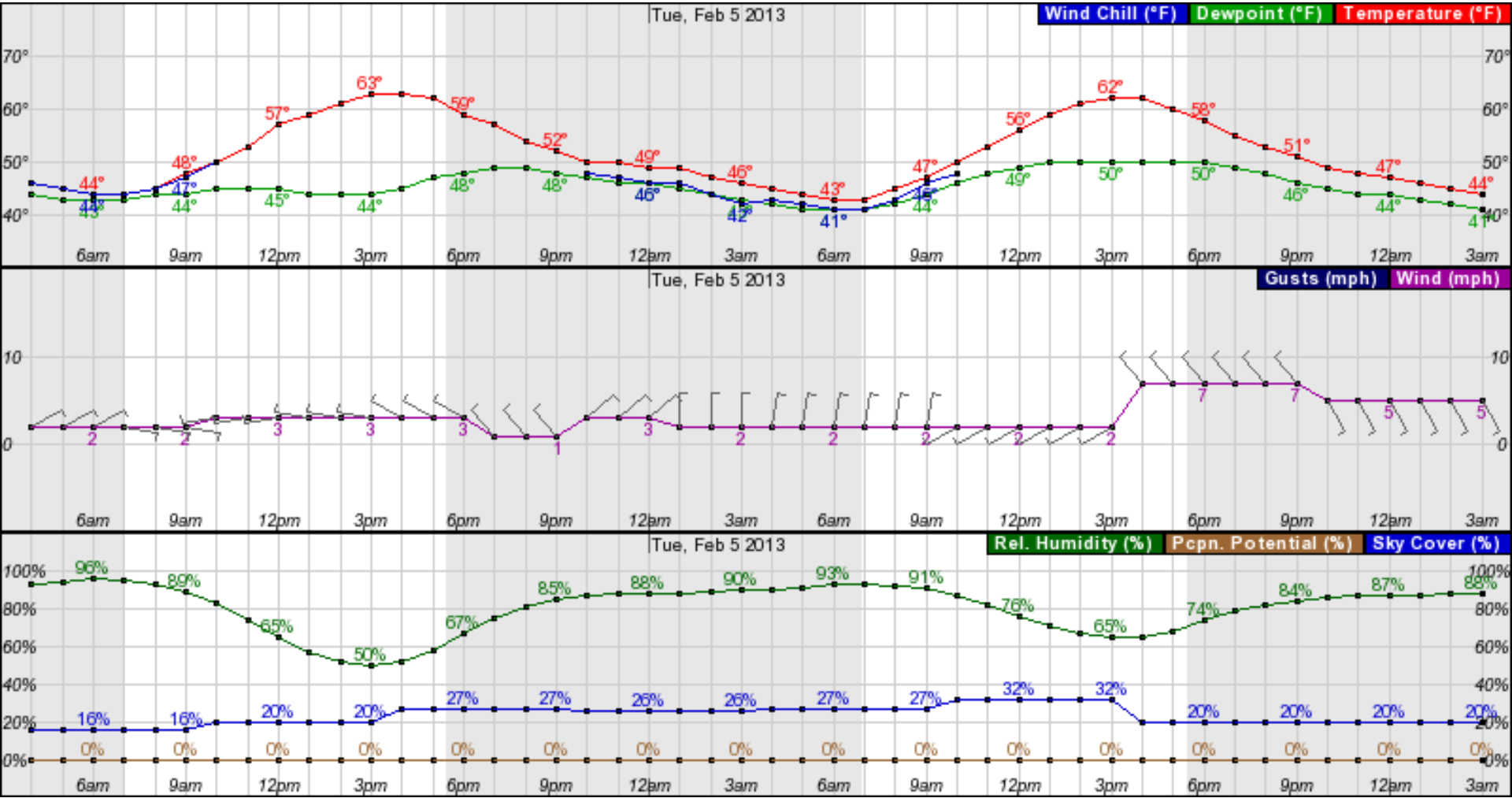
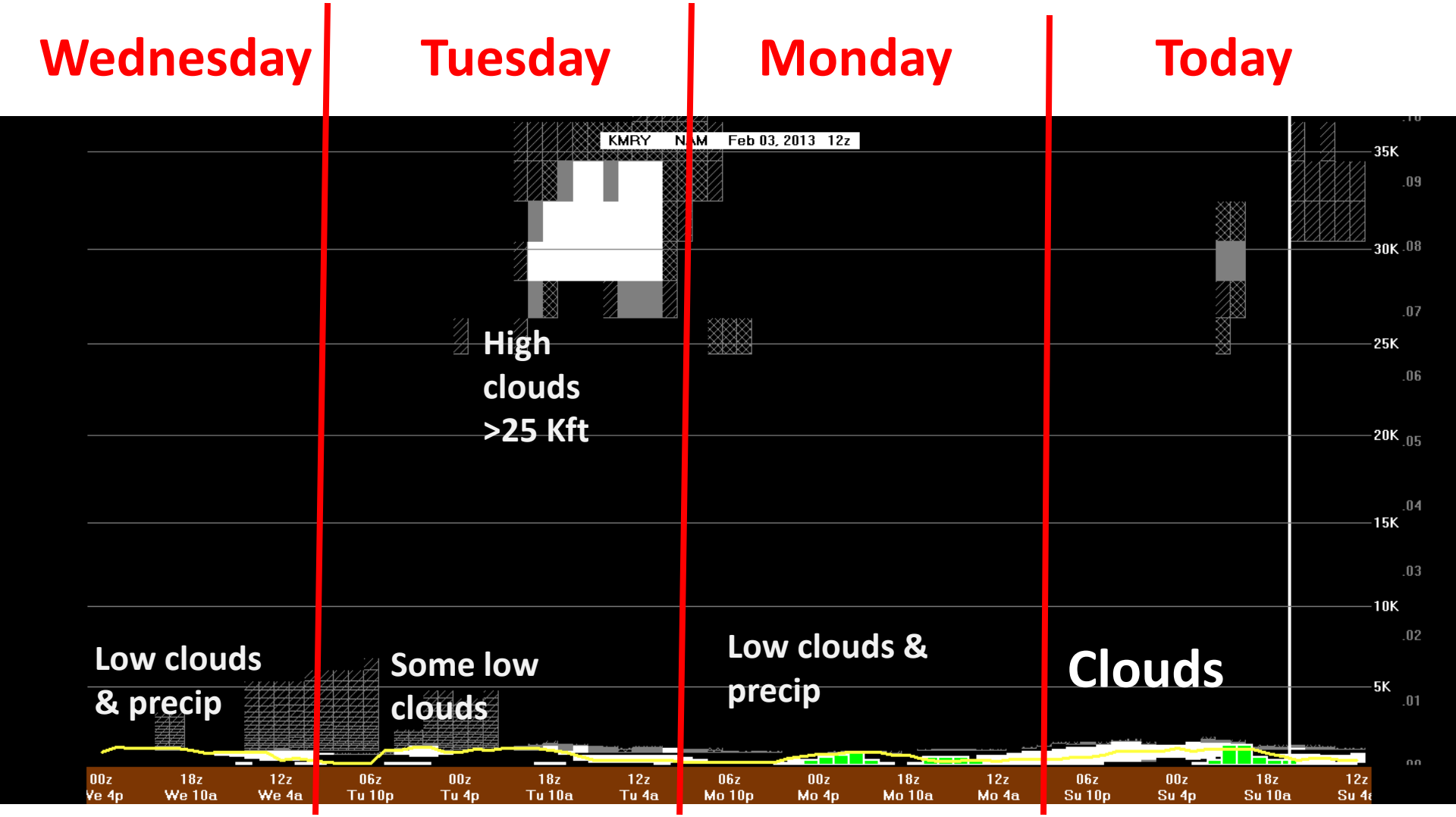
Tuesday: Clouds increasing, cloud cover ~31%

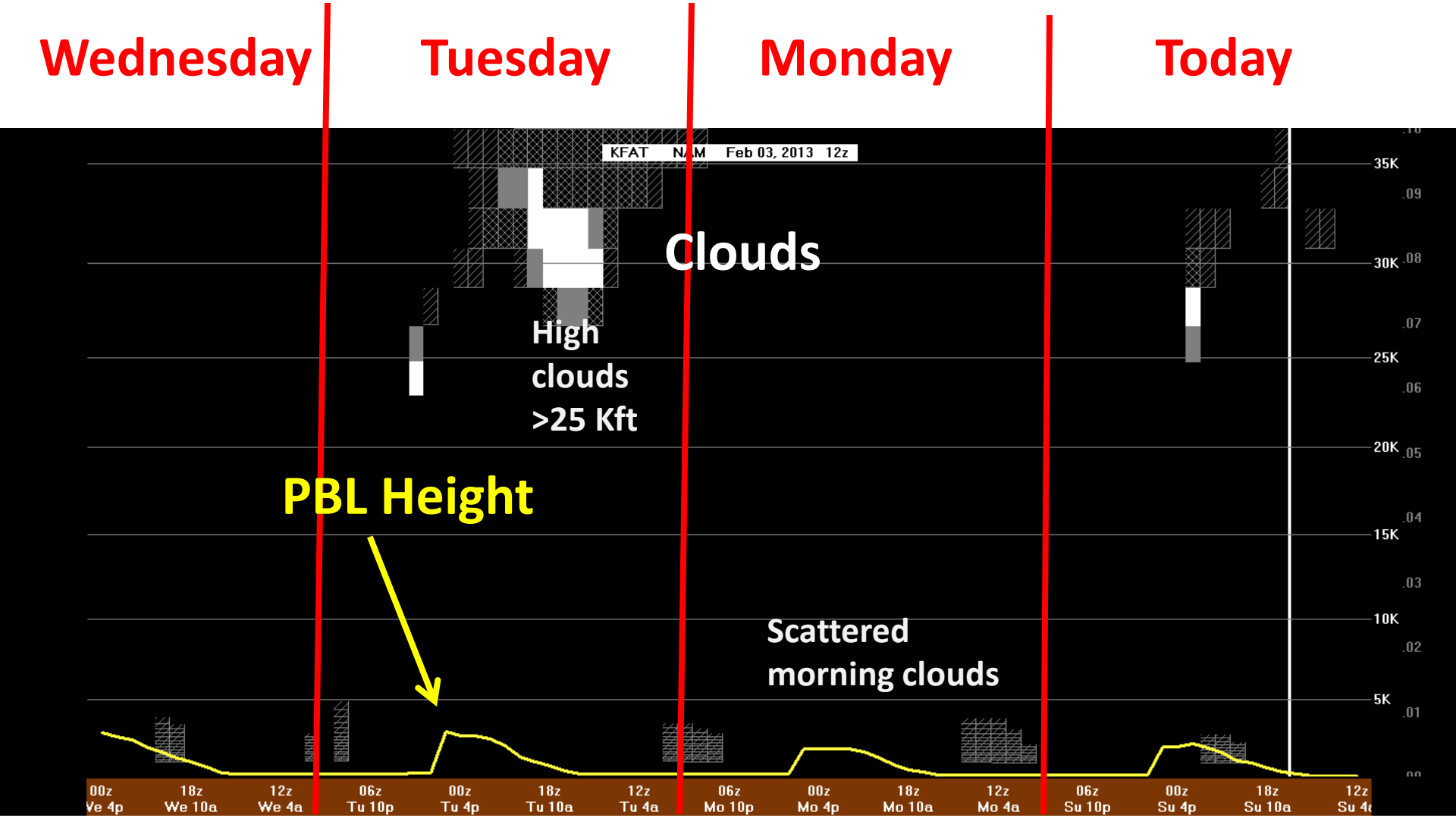
Monday → **Tuesday →**



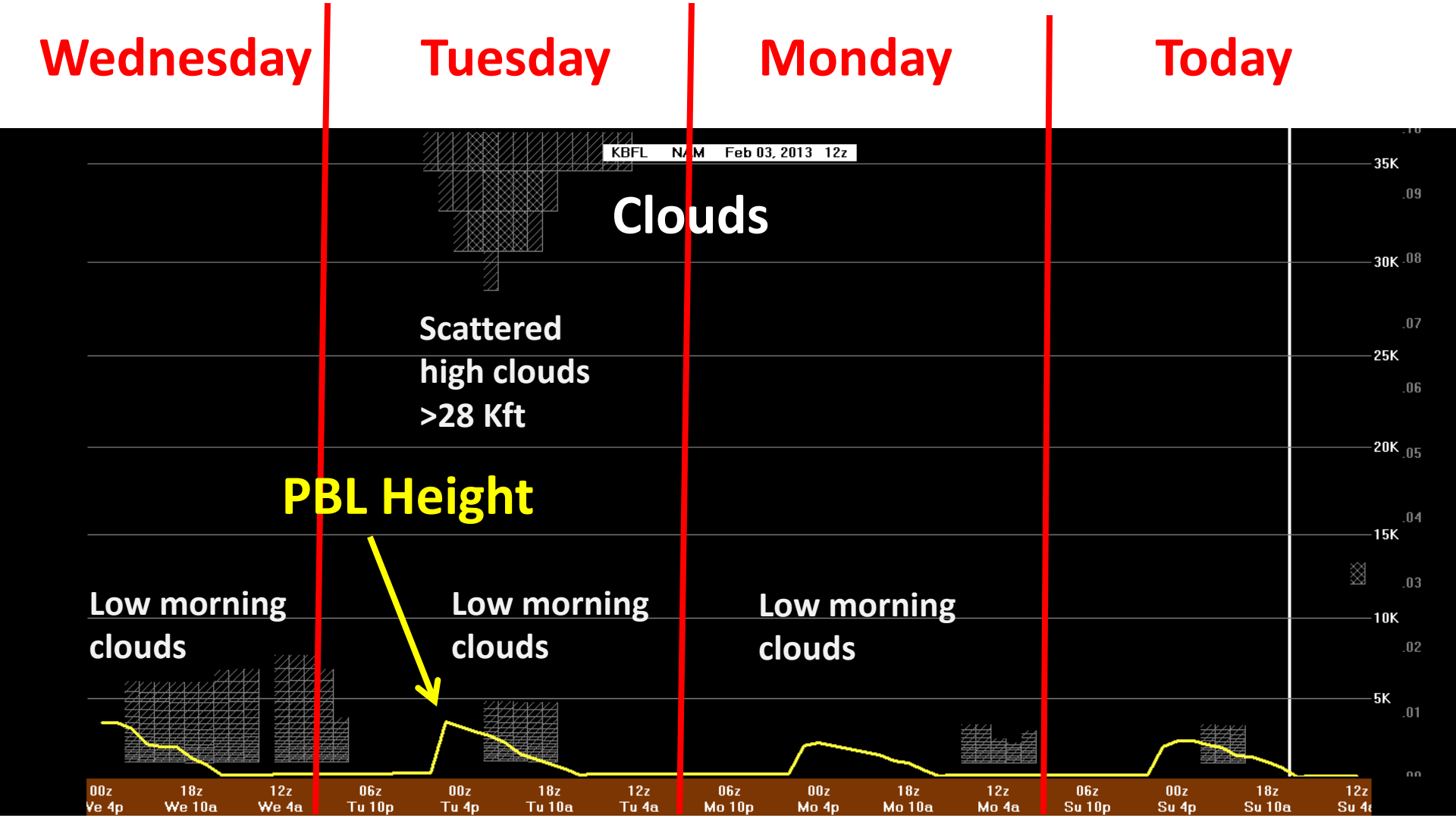
Monterey : BUFKIT NAM 12 UTC Sunday Feb. 3



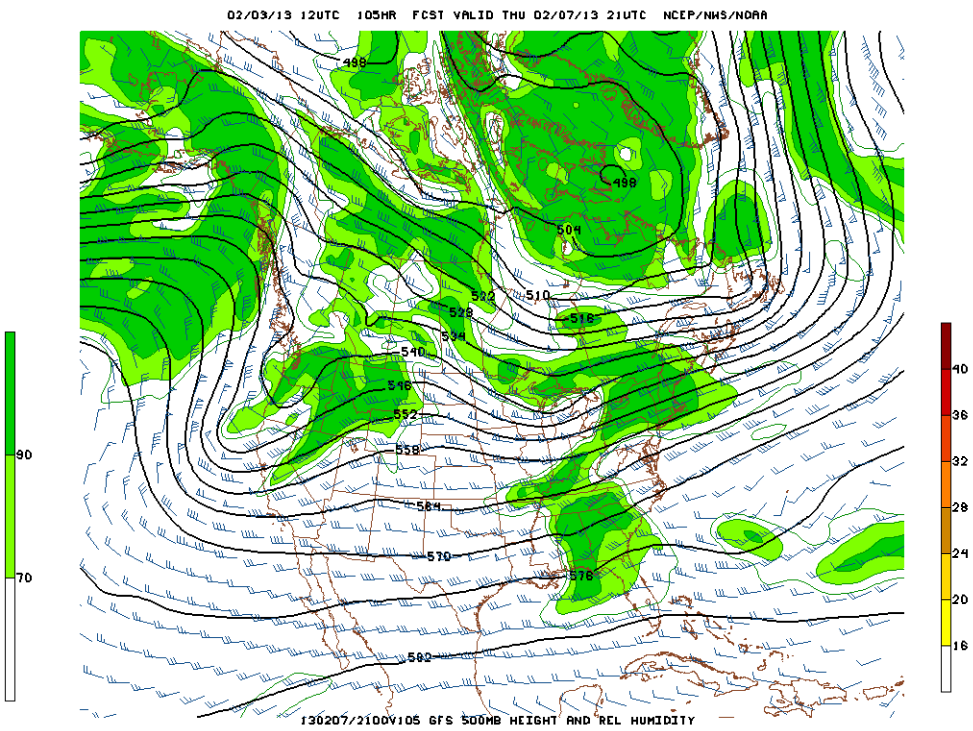
Fresno : BUFKIT NAM 12 UTC Sunday Feb. 3

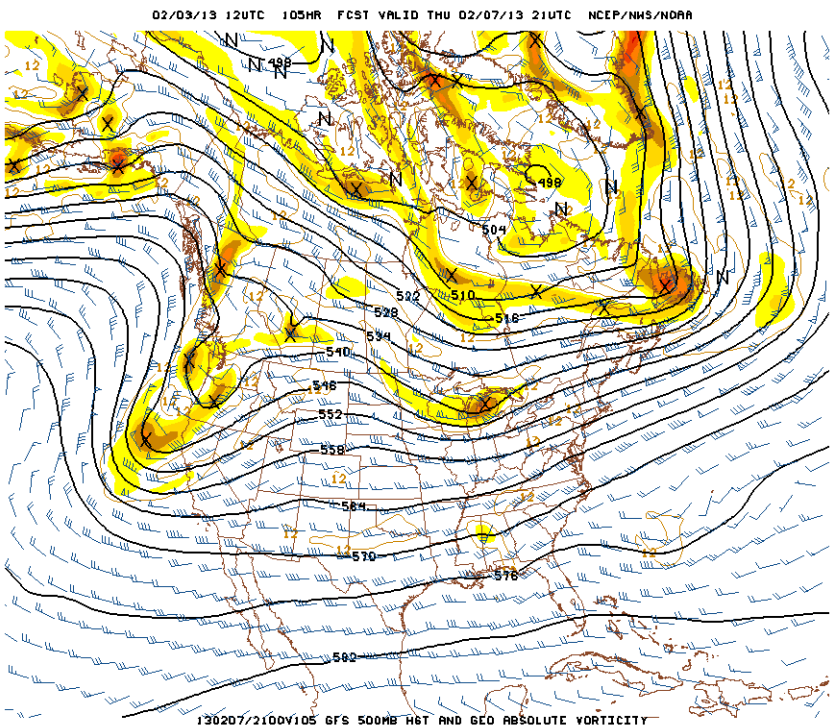


Bakersfield : BUFKIT NAM 12 UTC Sunday Feb. 3

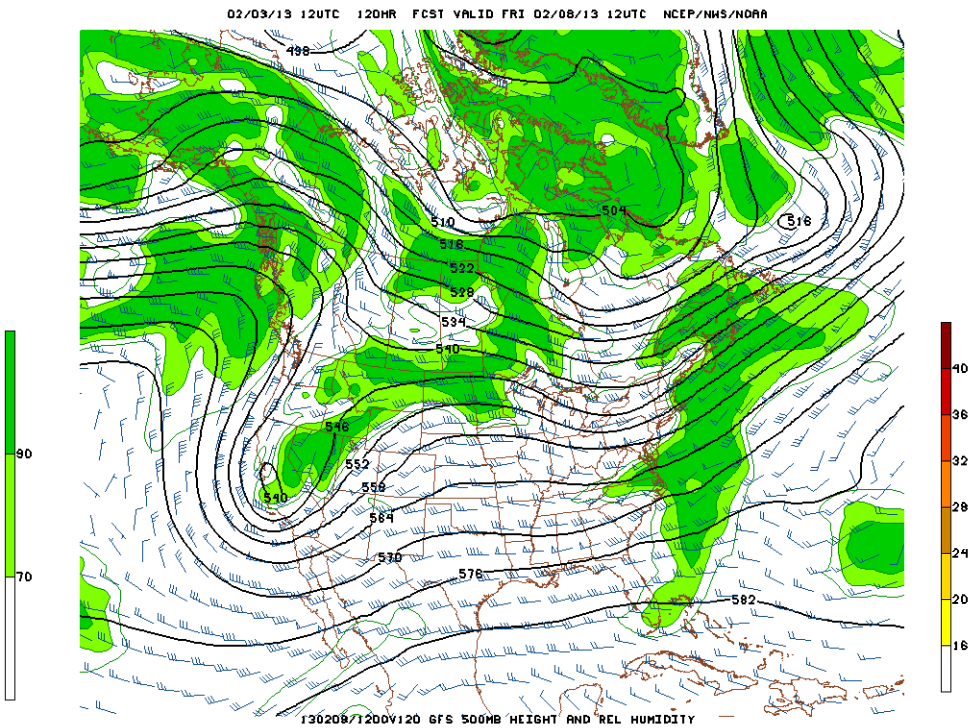


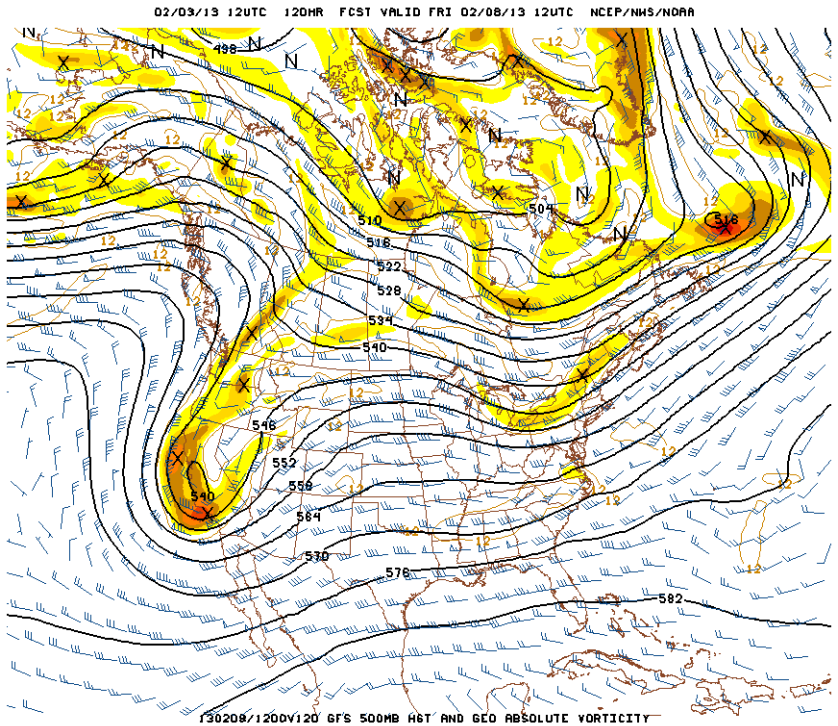
Thursday: The trough in the eastern Pacific is forecast to bring clouds and precipitation to central CA on Thursday and Friday.
It should be noted that the GFS and ECMWF are not in agreement over the location or strength of the trough, thus precipitation forecast is very uncertain.



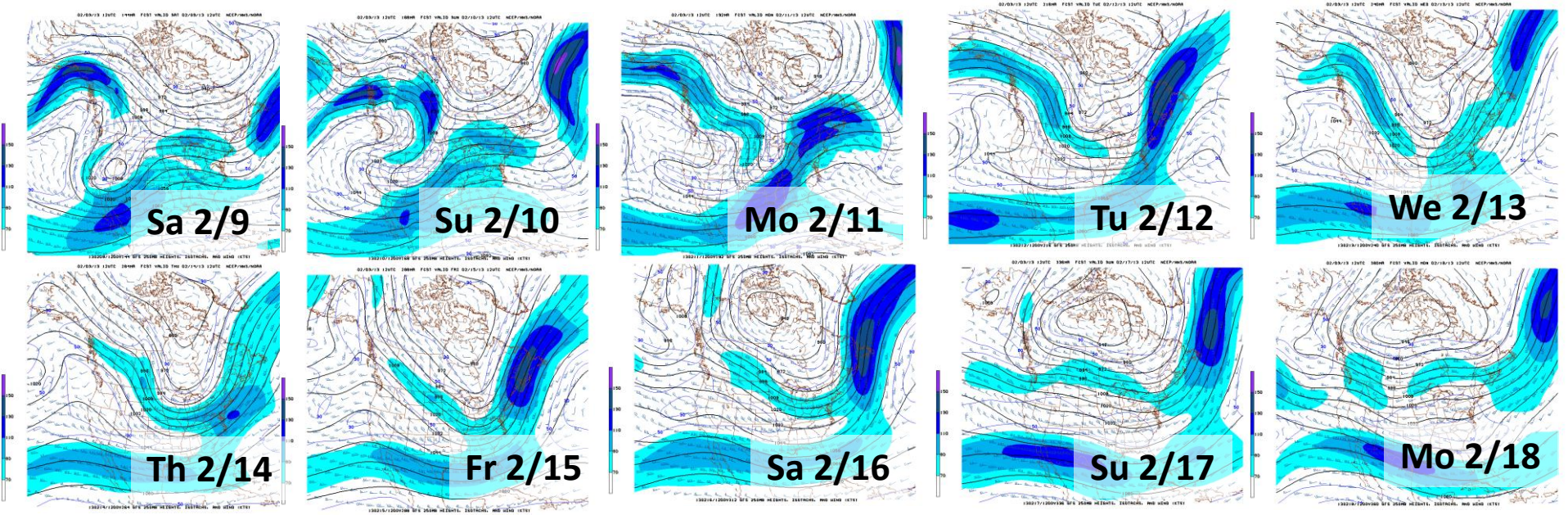


Friday and beyond: Central CA continues to be dominated by the trough system in the eastern Pacific. Precipitation is forecast, though again, this is highly uncertain.

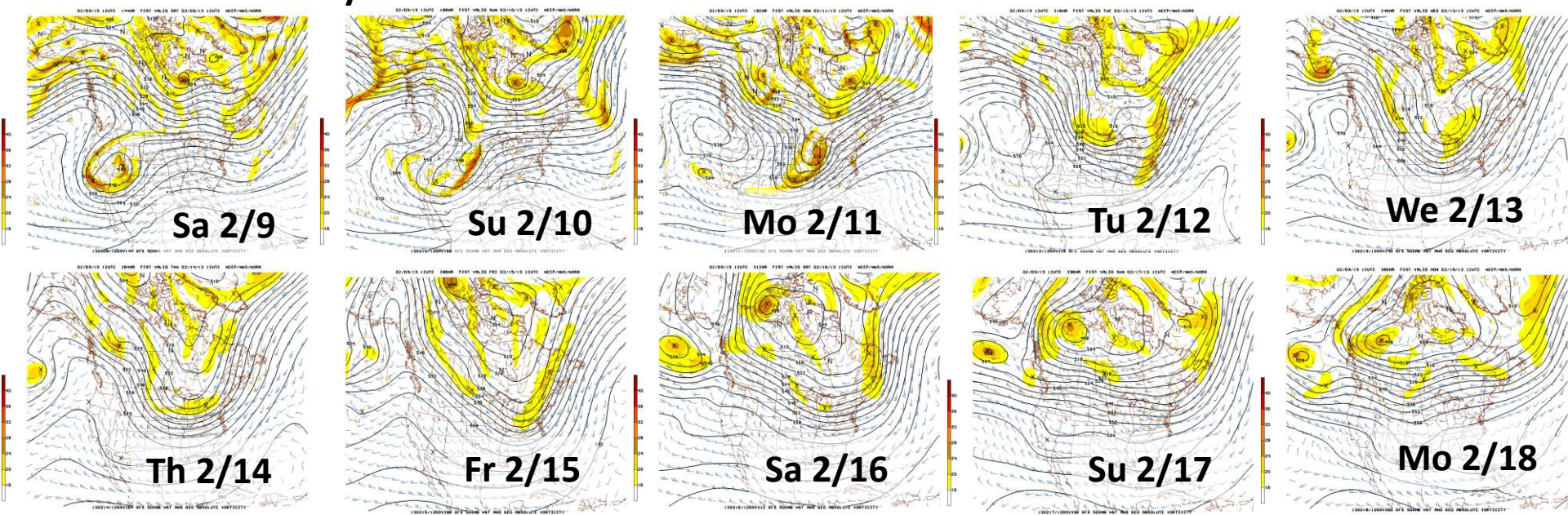




GFS - 250 mb winds - Extended forecast



GFS - 500 mb vorticity - Extended forecast

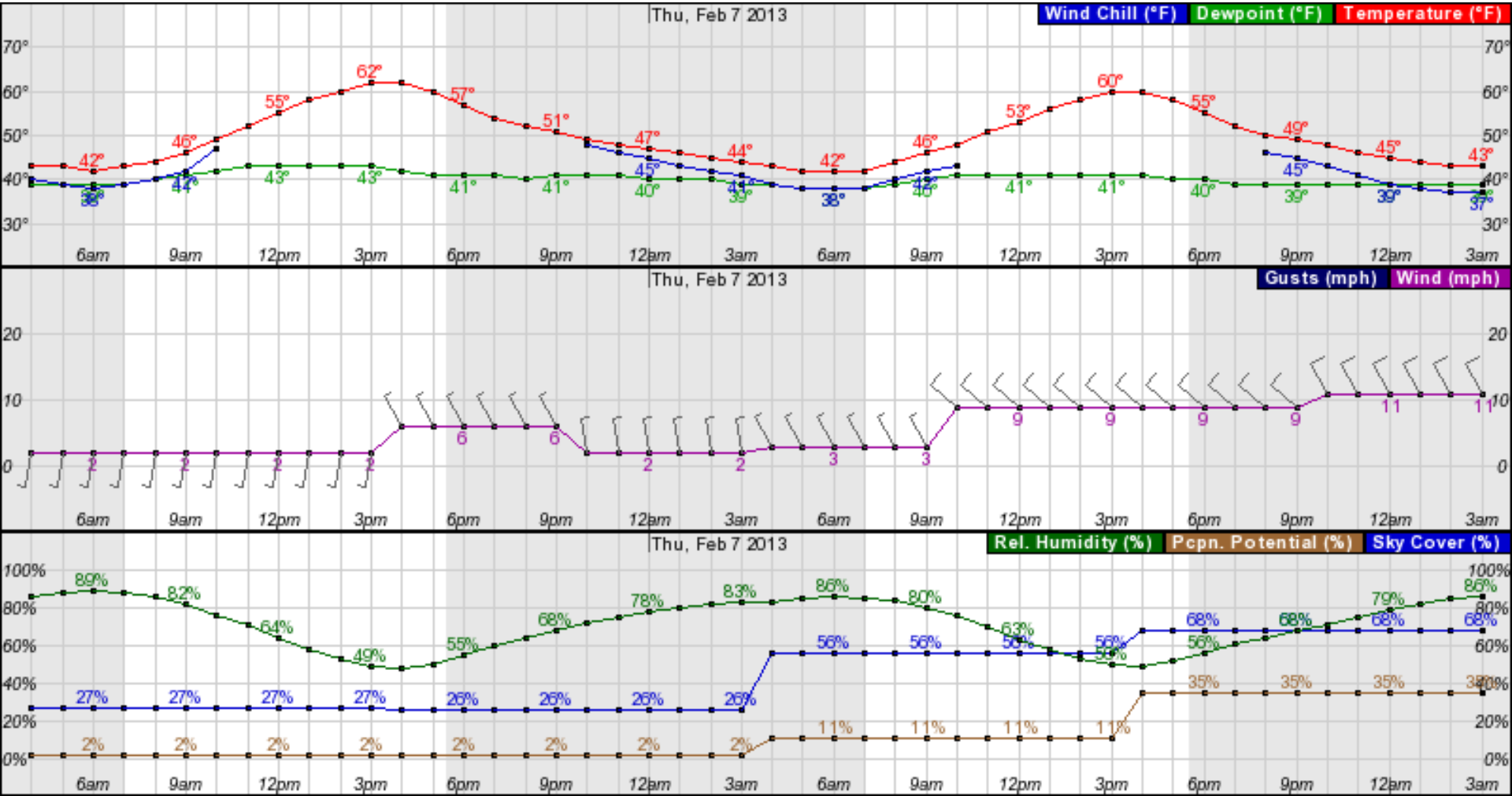


Fresno

Wednesday: Cloud cover ~27%

Thursday: Cloud cover ~50%

Wednesday → **Thursday →**

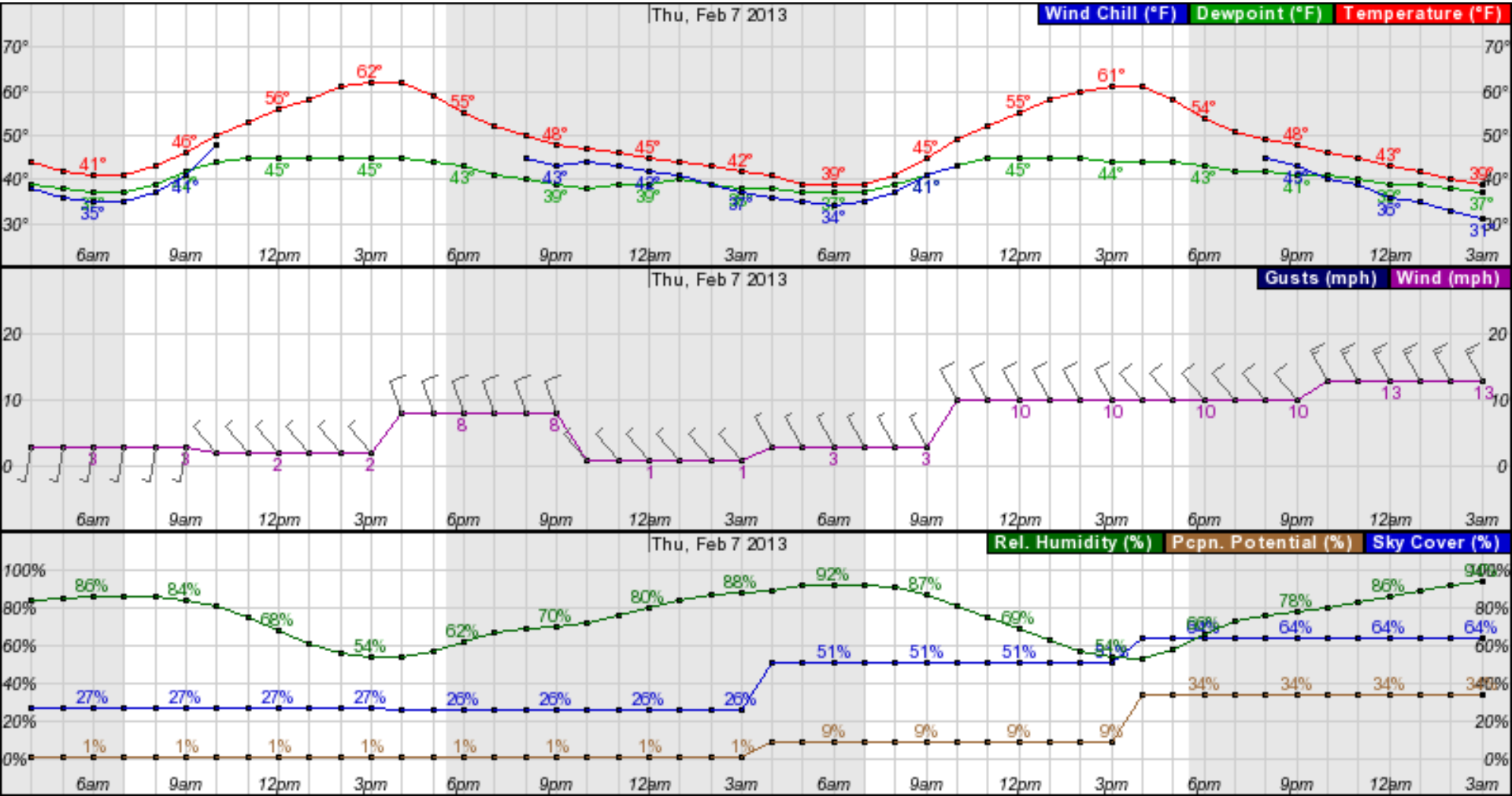


Hanford

Wednesday: Cloud cover ~27%

Thursday: Cloud cover ~50%

Wednesday → **Thursday →**

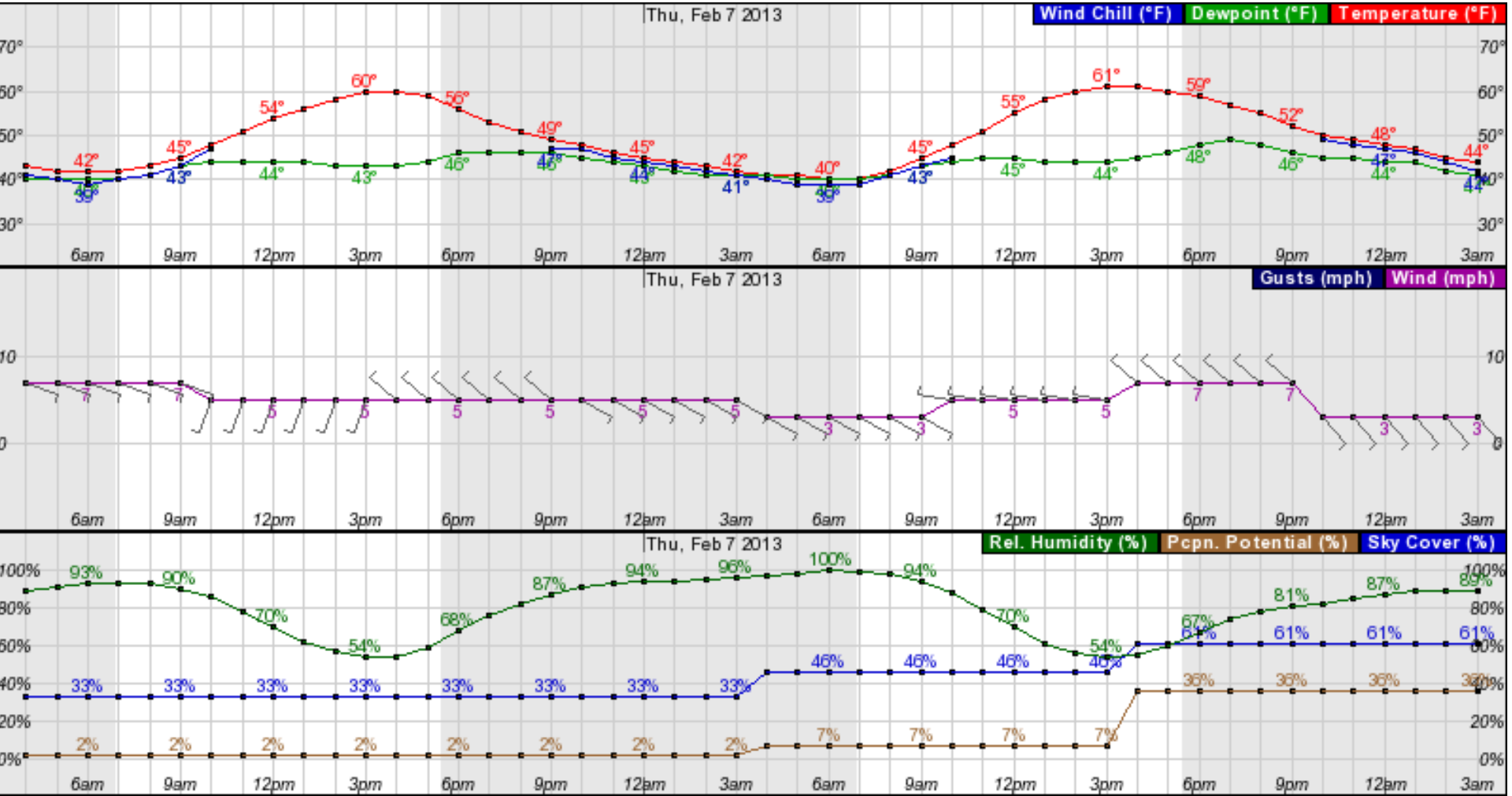


Bakersfield

Wednesday: Cloud cover ~30%

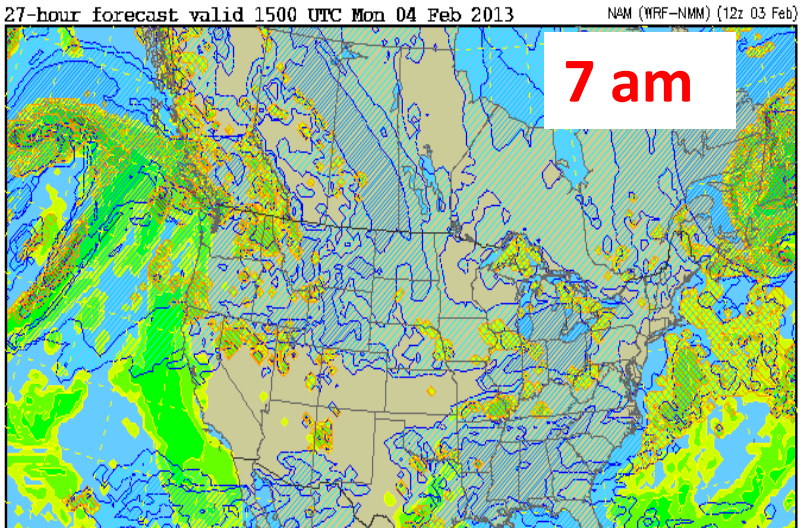
Thursday: Cloud cover ~40%

Wednesday → **Thursday →**

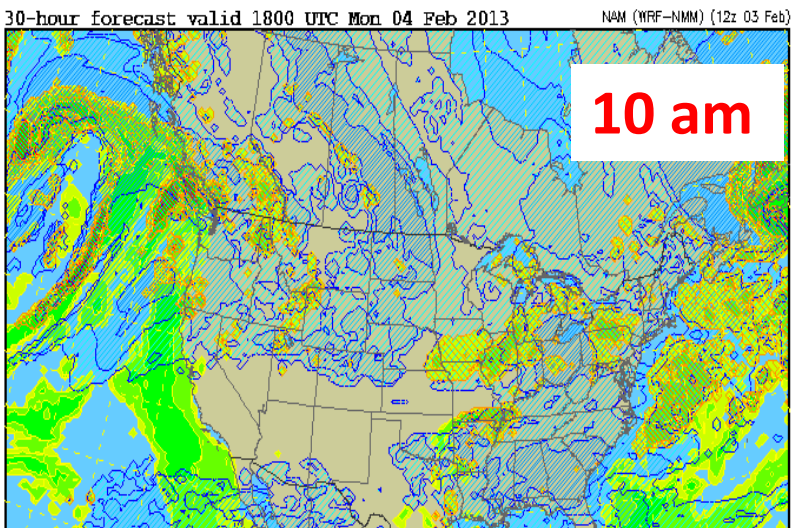


Tomorrow: NAM – Cloud-free over SJV; low-level clouds remain near the coast throughout the day.

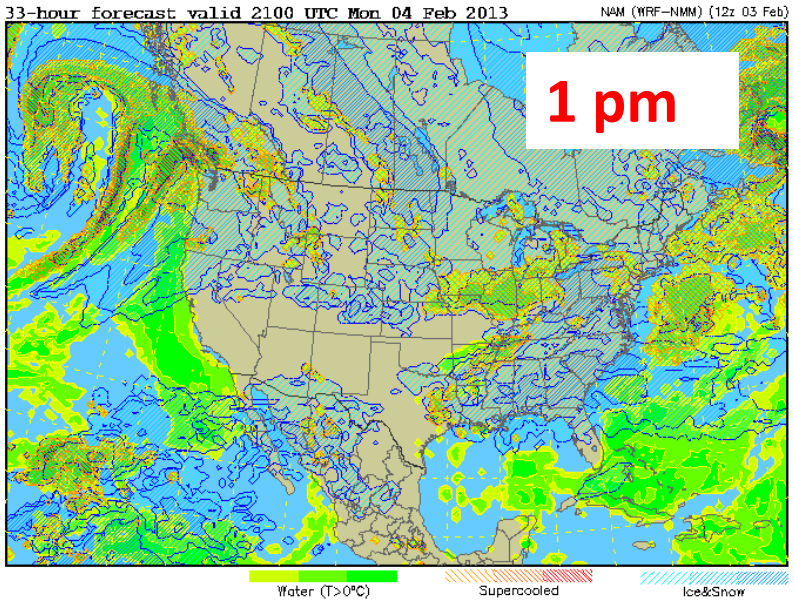
Integrated liquid and frozen hydrometeors (all levels)



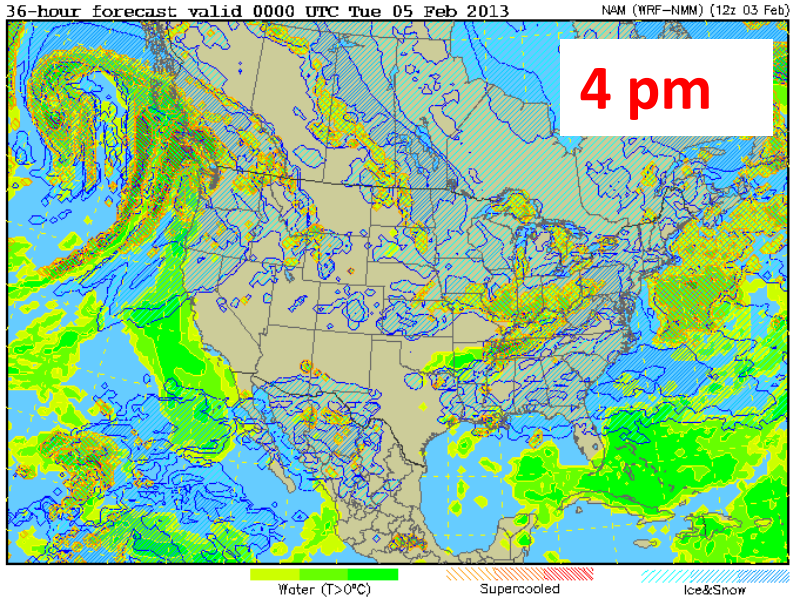
Integrated liquid and frozen hydrometeors (all levels)



Integrated liquid and frozen hydrometeors (all levels)



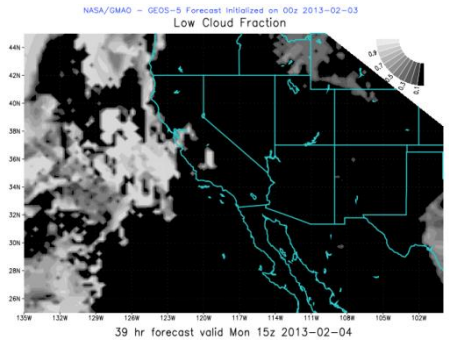
Integrated liquid and frozen hydrometeors (all levels)

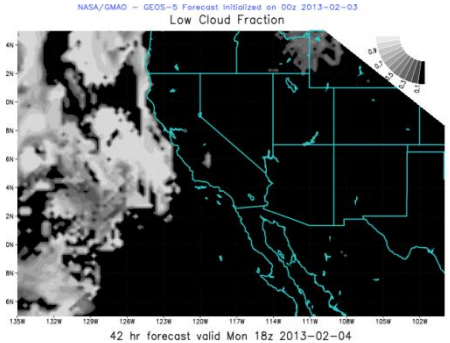


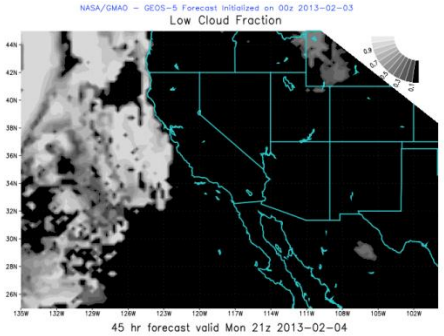
Monday: GEOS5 – SJV region cloud-free throughout the day, with low-level clouds offshore of the Bay Area.

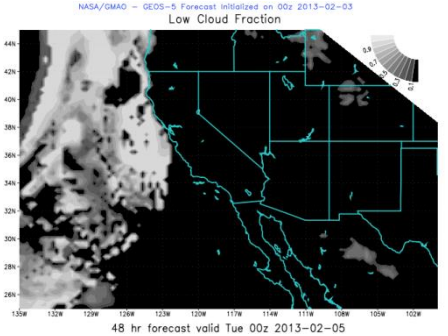
7 am | 10 am | 1 pm | 4 pm

GEOS5 – Low level

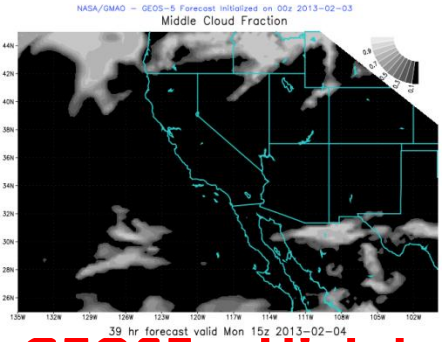


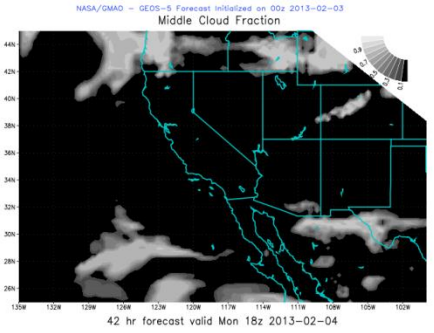


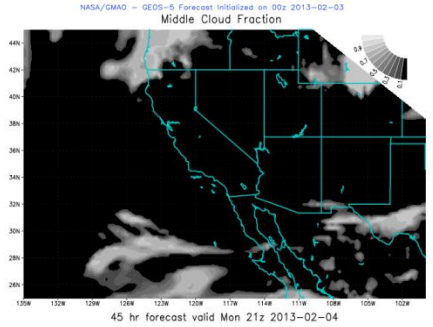


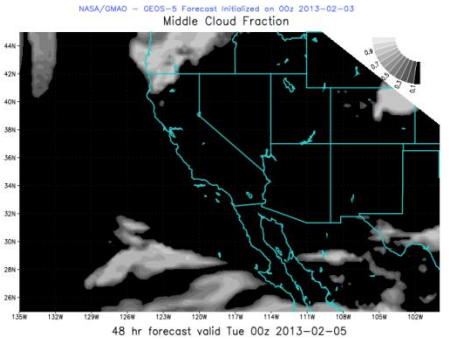


GEOS5 – Mid level

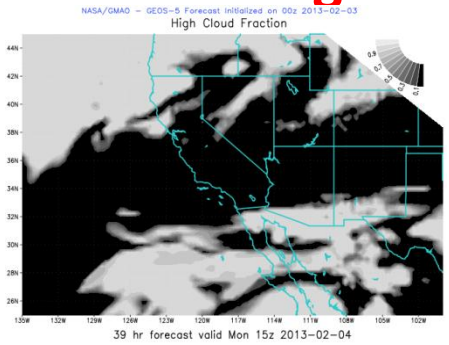


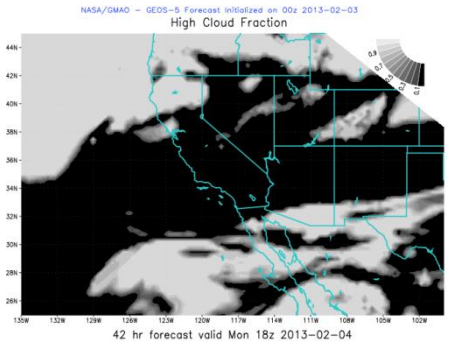


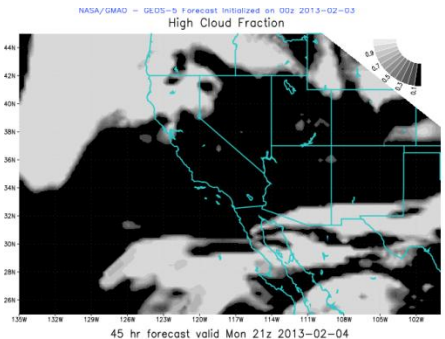


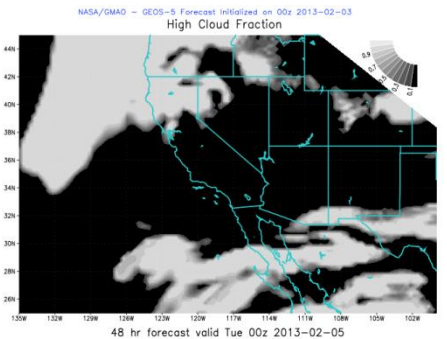


GEOS5 – High level





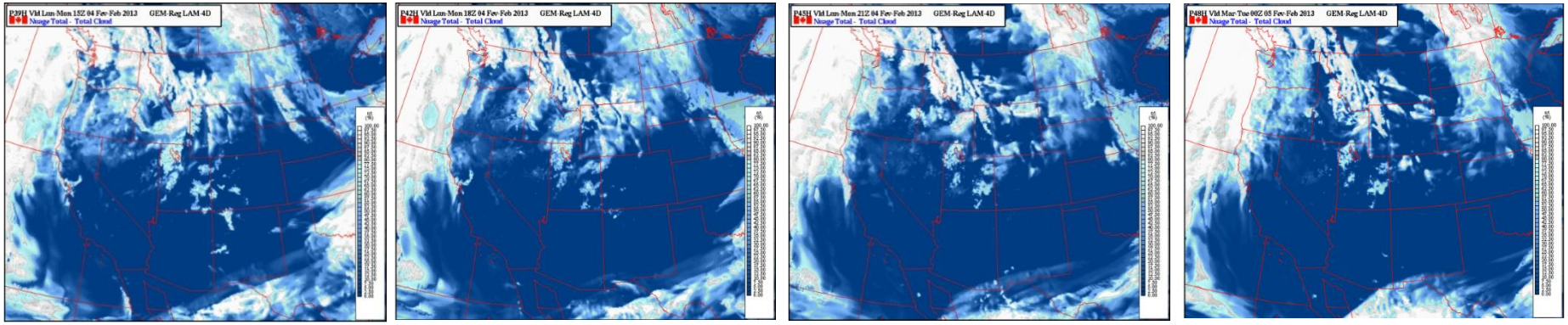




Tomorrow: Canadian – Minor cirrus wisps over northern SJV during morning; some low-level clouds just over Bay Area with cirrus.

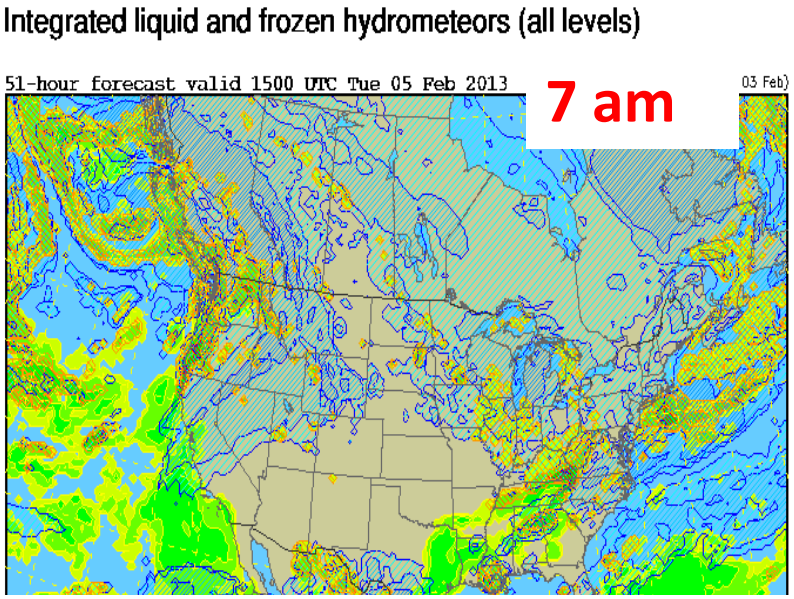
7 am 10 am 1 pm 4 pm

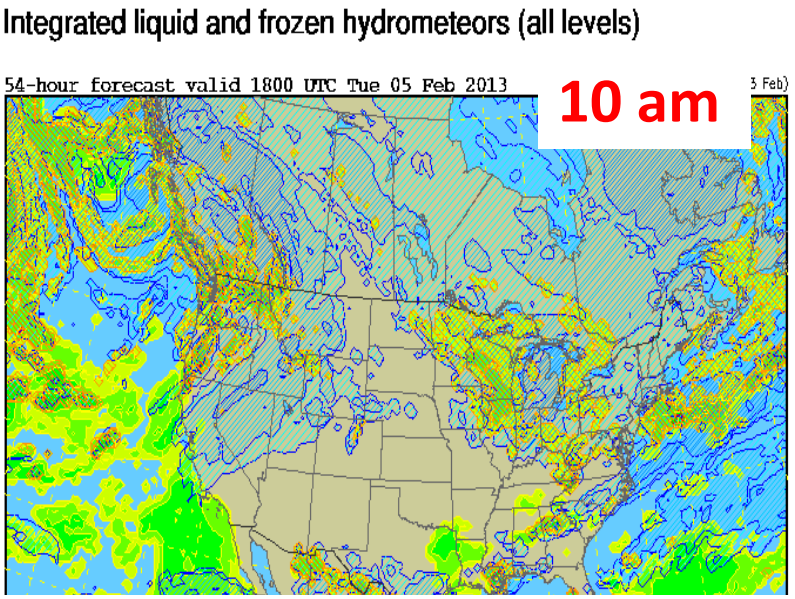
Canadian

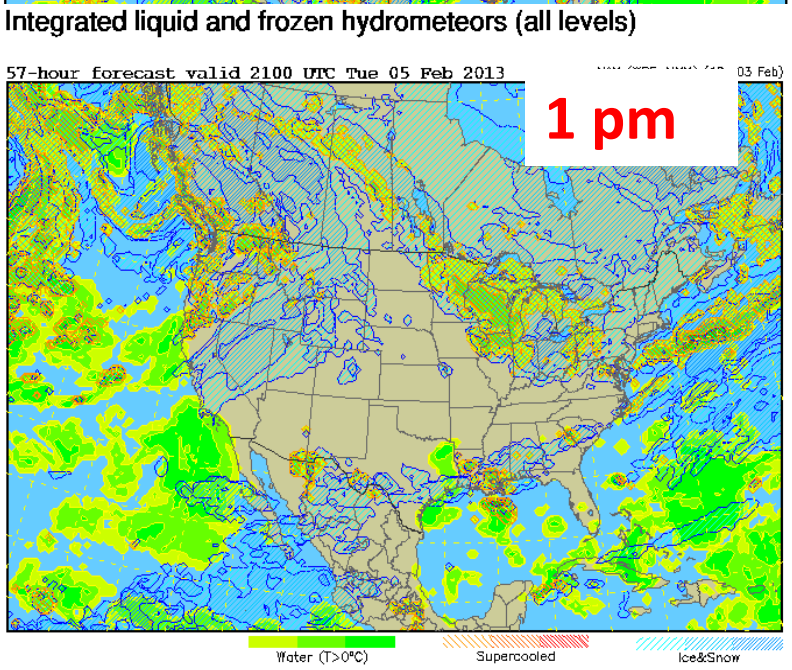


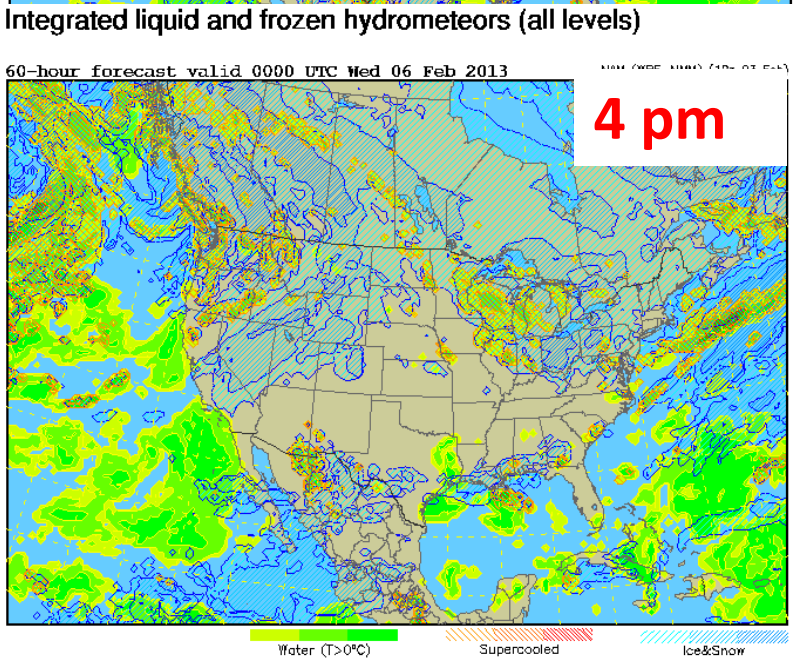
GFS – Total Cloud

Tuesday: High-level clouds from the north move into SJV, covering region by afternoon; low-level clouds offshore decrease by afternoon.





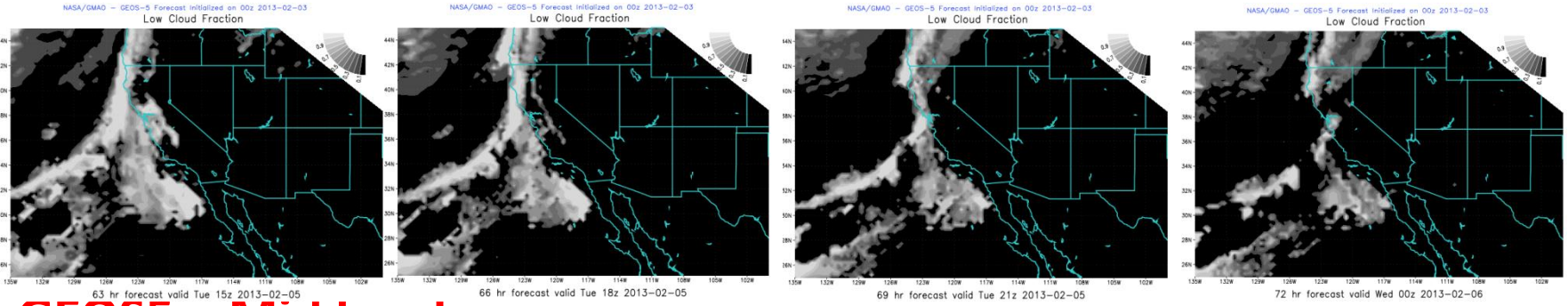




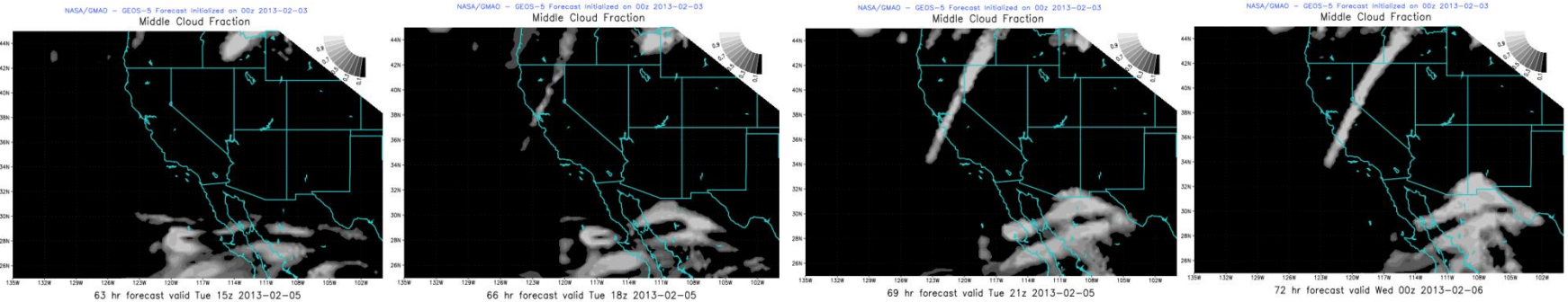
Tuesday: GEOS5

7 am | 10 am | 1 pm | 4 pm

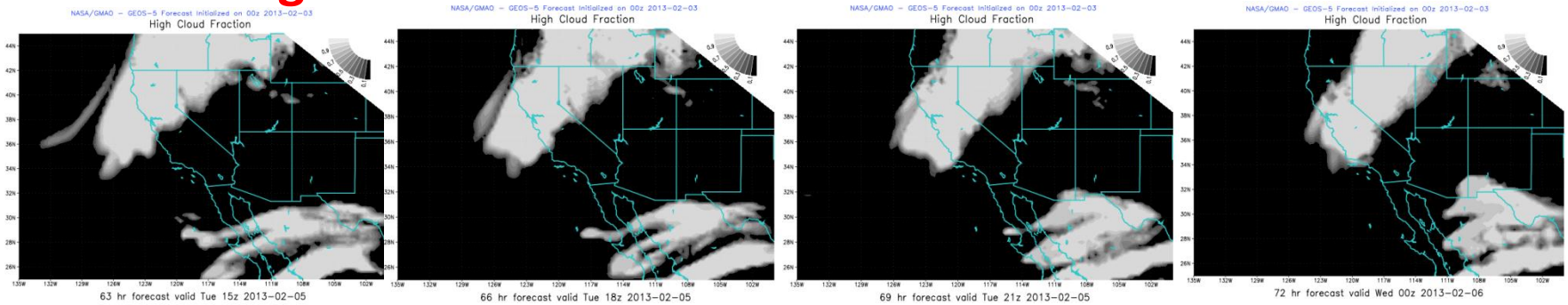
GEOS5 – Low level



GEOS5 – Mid level

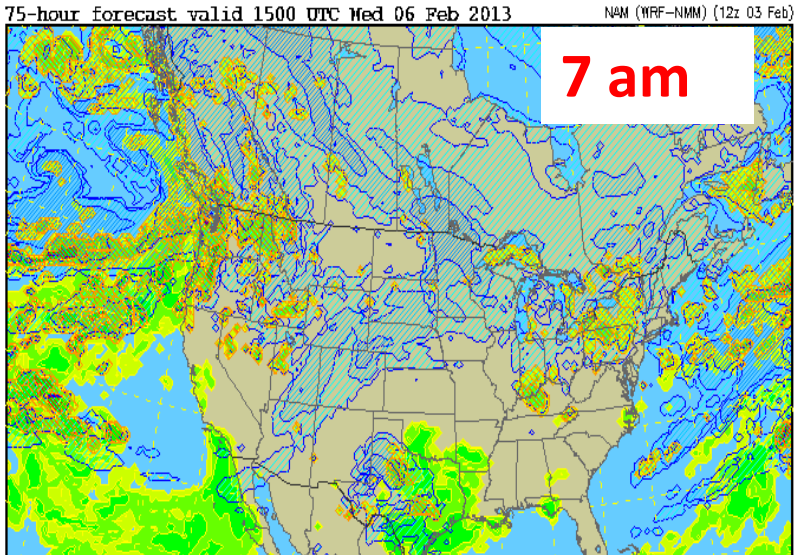


GEOS5 – High level

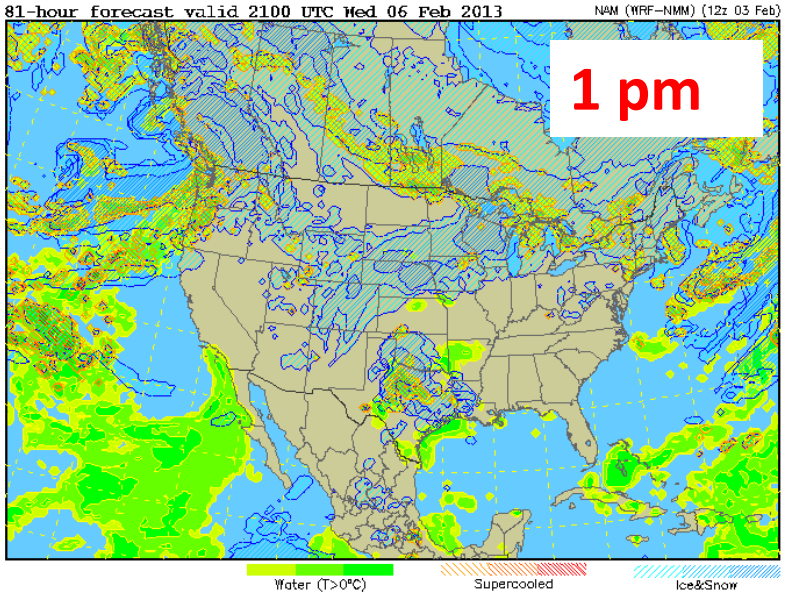


Wednesday: NAM – SJV and coast clear of clouds.

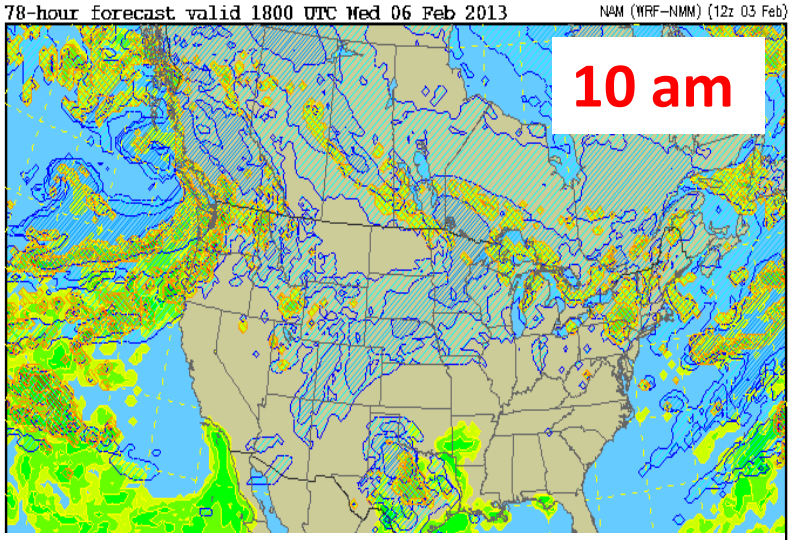
Integrated liquid and frozen hydrometeors (all levels)



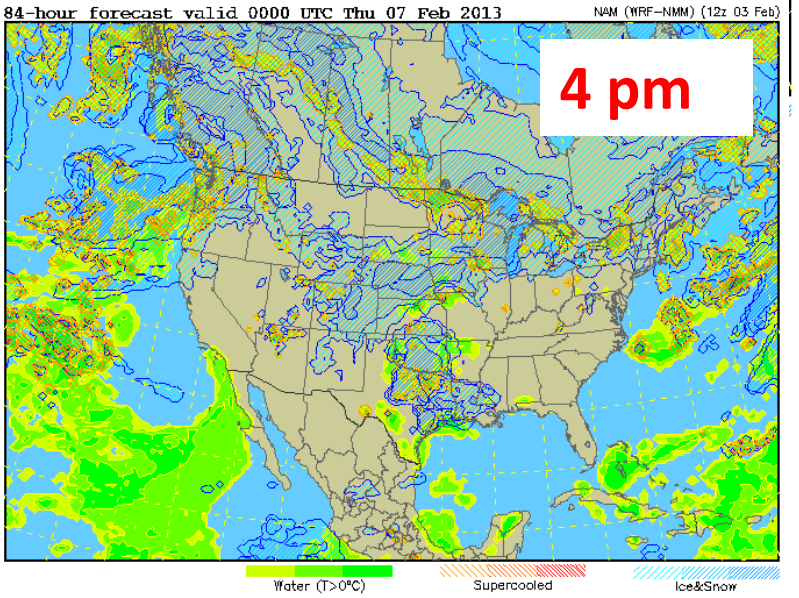
Integrated liquid and frozen hydrometeors (all levels)



Integrated liquid and frozen hydrometeors (all levels)



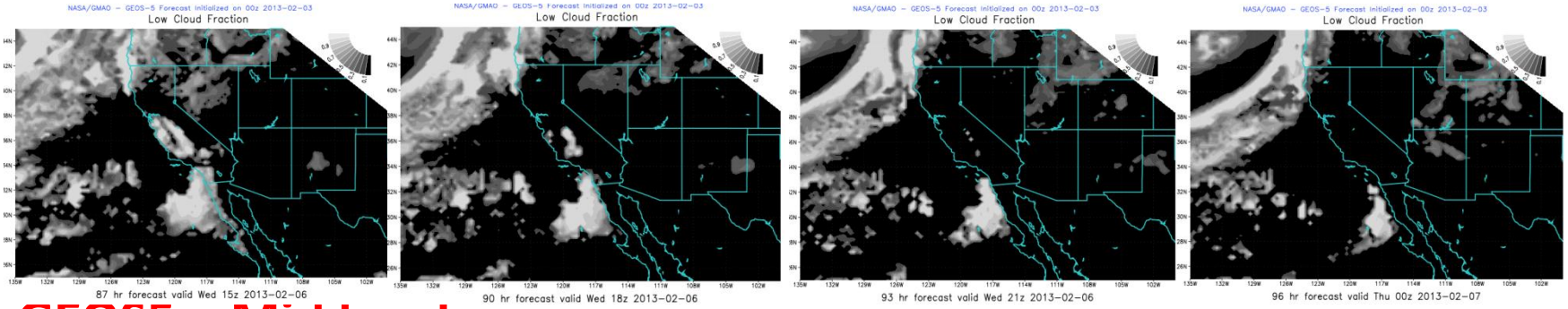
Integrated liquid and frozen hydrometeors (all levels)



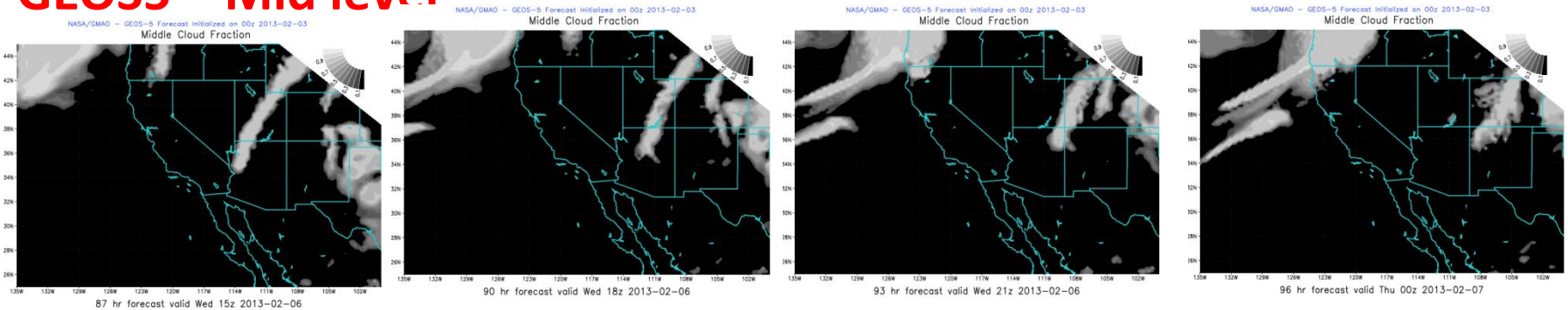
Wendesday: GEOS5 –

7 am 10 am 1 pm 4 pm

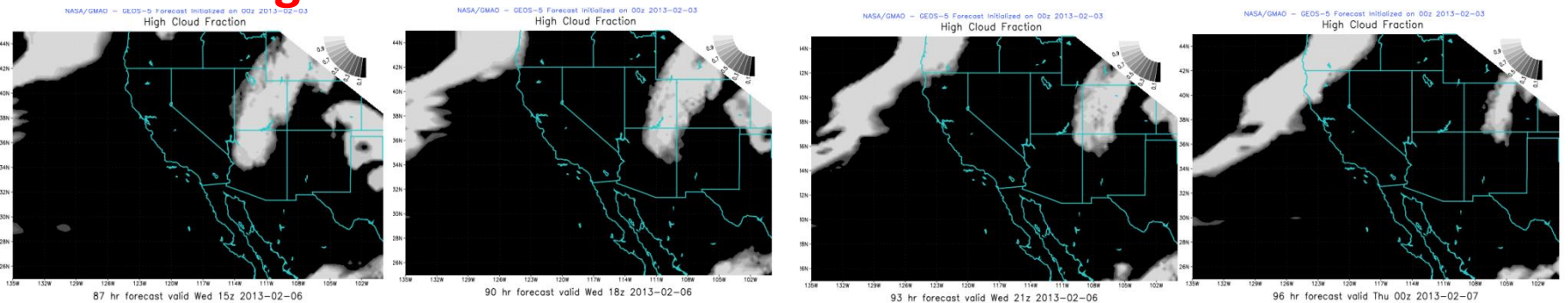
GEOS5 – Low level



GEOS5 – Mid level



GEOS5 – High level



AREA FORECAST DISCUSSION
NATIONAL WEATHER SERVICE SAN JOAQUIN VALLEY - HANFORD CA
204 AM PST SUN FEB 3 2013

.SYNOPSIS...
LITTLE CHANGE IN WEATHER IS EXPECTED FOR THE LOCAL AREA WITH DRY CONDITIONS AND PATCHY NIGHT AND MORNING FOG IN THE SAN JOAQUIN VALLEY THROUGH THE MIDDLE OF NEXT WEEK. A TROUGH OF LOW PRESSURE FROM THE PACIFIC WILL MOVE INTO THE REGION ON THURSDAY BRINGING THE NEXT THREAT OF PRECIPITATION.

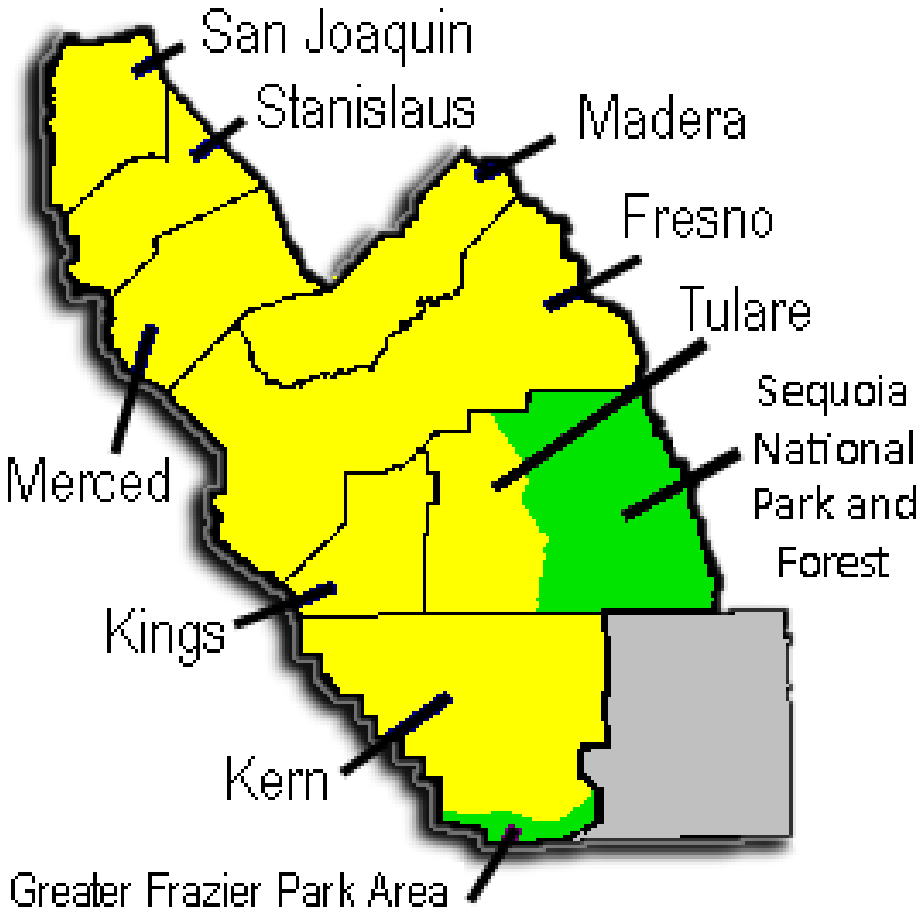
&&

.DISCUSSION...EDWARDS RADAR SHOWS THE LAST OF THE SPRINKLES OR LIGHT RAIN SHOWERS NOW EXITING EAST INTO SAN BERNARDINO COUNTY AS THE SUB TROPICAL MOISTURE FEED HEADS EAST. JUST TRACE AMOUNTS TO AROUND 0.01" WERE OBSERVED OVER THE KERN COUNTY MOUNTAINS. FOR TODAY THE CLOUDS WILL MOVE AWAY TO THE EAST AND MUCH OF THE FORECAST AREA WILL BE SUNNY. RIDGING IS AGAIN PROJECTED TO GAIN STRENGTH OVER CENTRAL CALIFORNIA LATER TODAY AND MONDAY BEFORE A WEAK SHORTWAVE TROUGH PUSHES ACROSS THE PACIFIC NORTHWEST AND FAR NORTHERN CALIFORNIA ON TUESDAY.

FORECAST MODELS ON WEDNESDAY THEN DEVELOP A ZONAL TO SLIGHT RIDGE FLOW PATTERN BEFORE BRINGING A POTENTIAL PRECIPITATION PRODUCING SYSTEM INTO CENTRAL CALIFORNIA LATE THURSDAY THROUGH FRIDAY. IT SHOULD BE NOTED THAT THE ECMWF AND GFS MODELS ARE NOT IN VERY GOOD AGREEMENT IN THE DEPTH AND PLACEMENT OF THE TROUGH. THE ECMWF IS WEAKER, FARTHER EAST, AND DRIER WHILE THE GFS DEVELOPS A COLD 539 DM LOW OVER THE SIERRA ON FRIDAY. THE NECP GLOBAL ENSEMBLE RMOP (RELATIVE MEASURE OF PREDICTABILITY FOR ENSEMBLE MEAN FORECAST) SHOWS LOW CONFIDENCE (MEASURE OF PROBABILITY PERCENTAGE NOT EXCEEDING 15%) IN EITHER SOLUTION FOR THE THURSDAY-FRIDAY TIME FRAME. WILL OPT TO KEEP THE CHANCE POPS AT THIS TIME AND LEAVE IT AT THAT FOR NOW.

&&

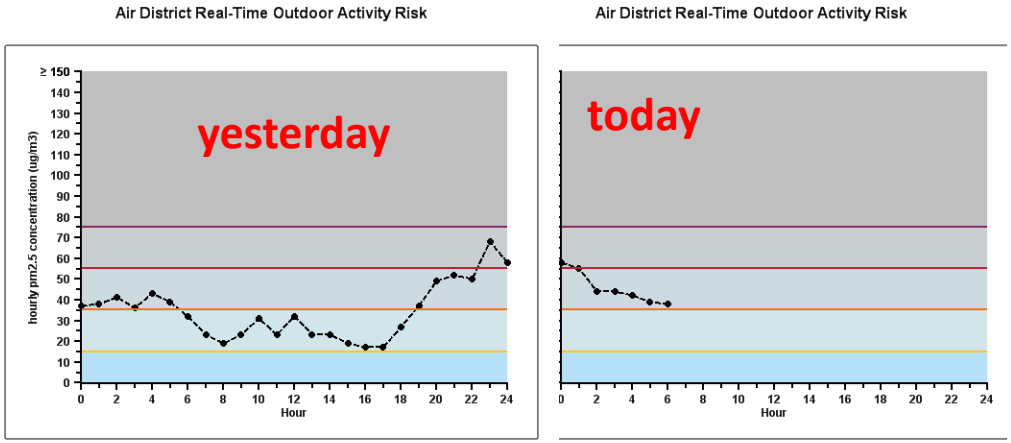
SJV APCD Daily Forecast – for TODAY (February 3)



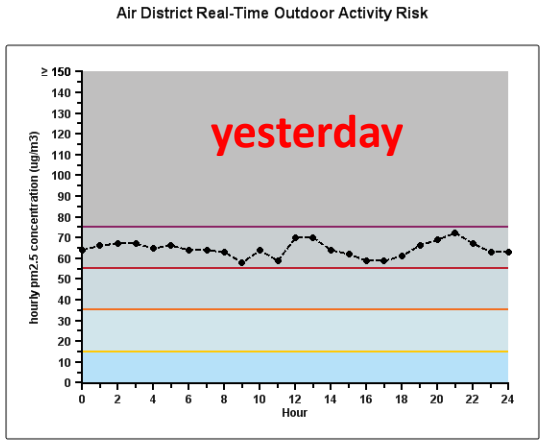
ROAR LEVEL	Ozone (O^3)	Particulate Matter (PM 2.5)
LEVEL 1 Good	1-59 ppb	1-15 µg/m³
LEVEL 2 Moderate	60-75 ppb	16-35 µg/m³
LEVEL 3 Unhealthy for Sensitive Groups	76-95 ppb	36-55 µg/m³
LEVEL 4 Unhealthy	96-115 ppb	56-75 µg/m³
LEVEL 5 Very Unhealthy	>115 ppb	>75 µg/m³

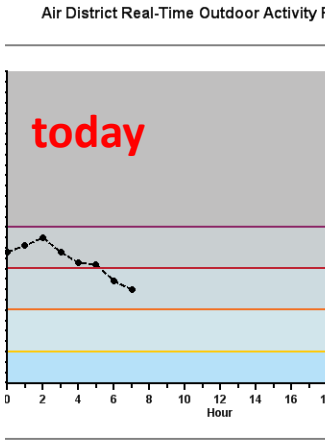
February 2 (Saturday) & February 3 (Today)

Fresno-Garland

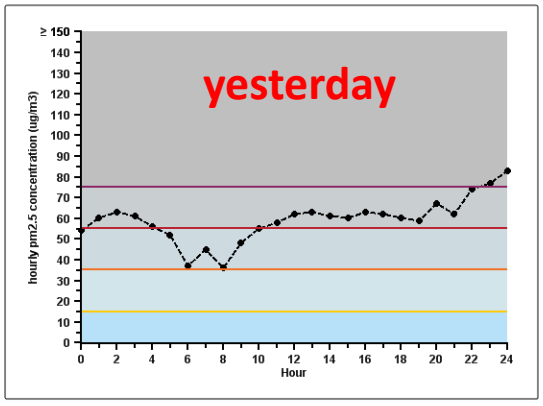


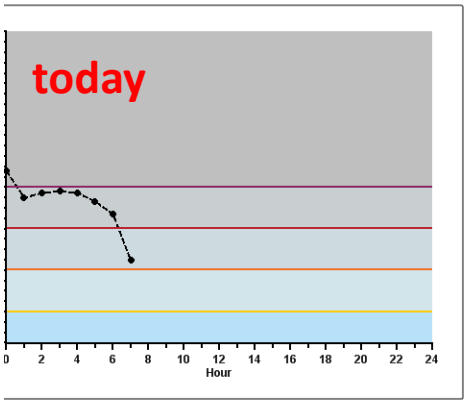
Corcoran



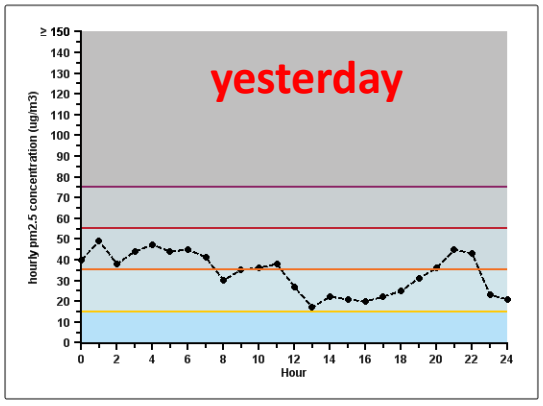


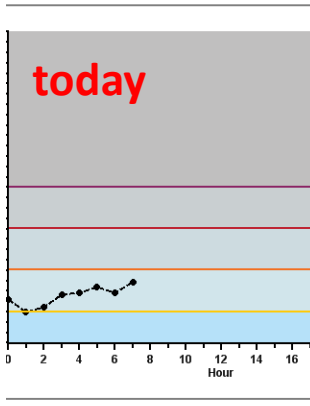
Bakersfield



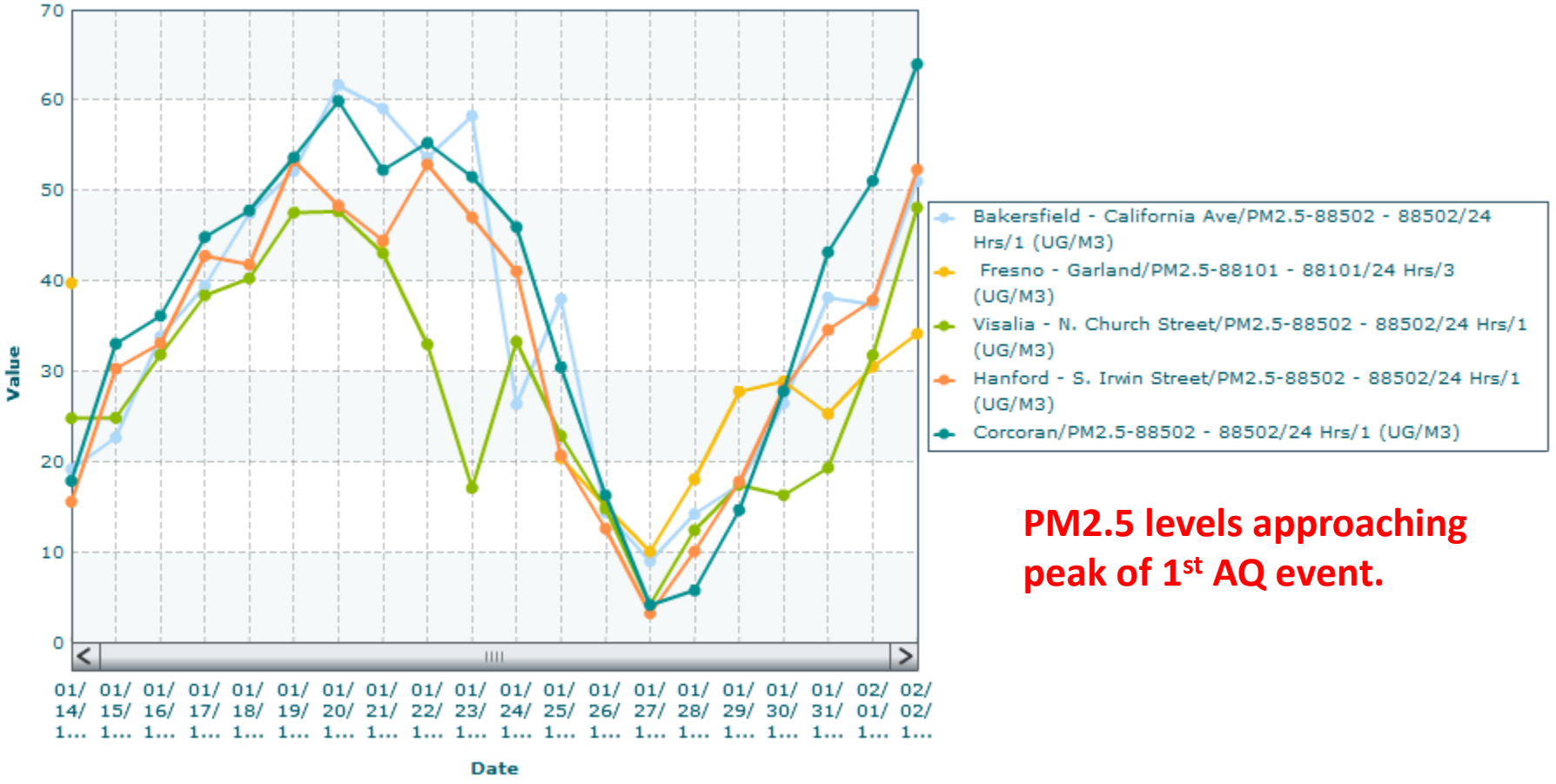


Stockton





DISCOVER-AQ Sites: Daily PM2.5 (ug/m3)

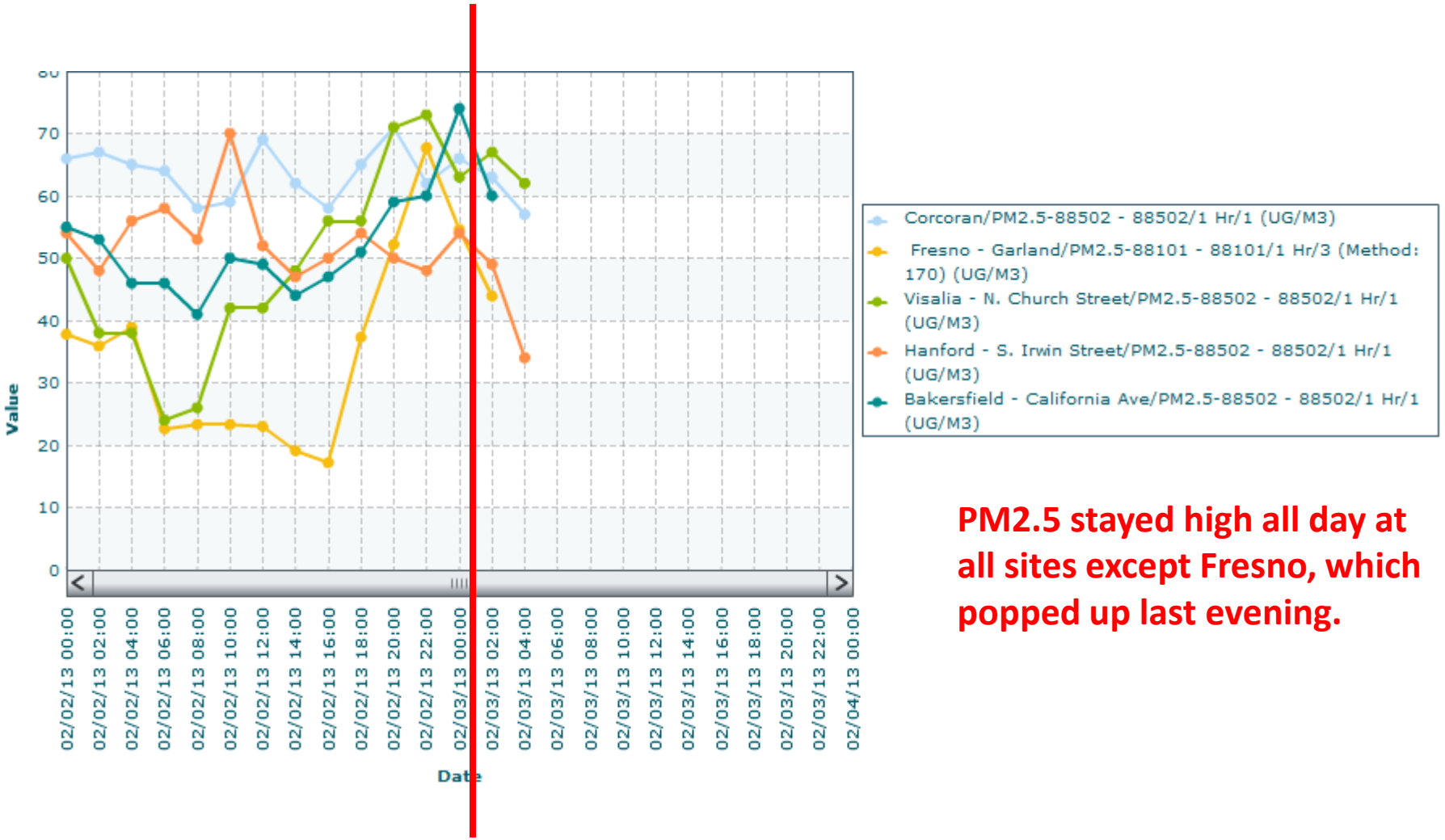


PM2.5 levels approaching peak of 1st AQ event.

1/14 **2/02**

DISCOVER-AQ period characterized by two pollution events and one gradual clean-out.

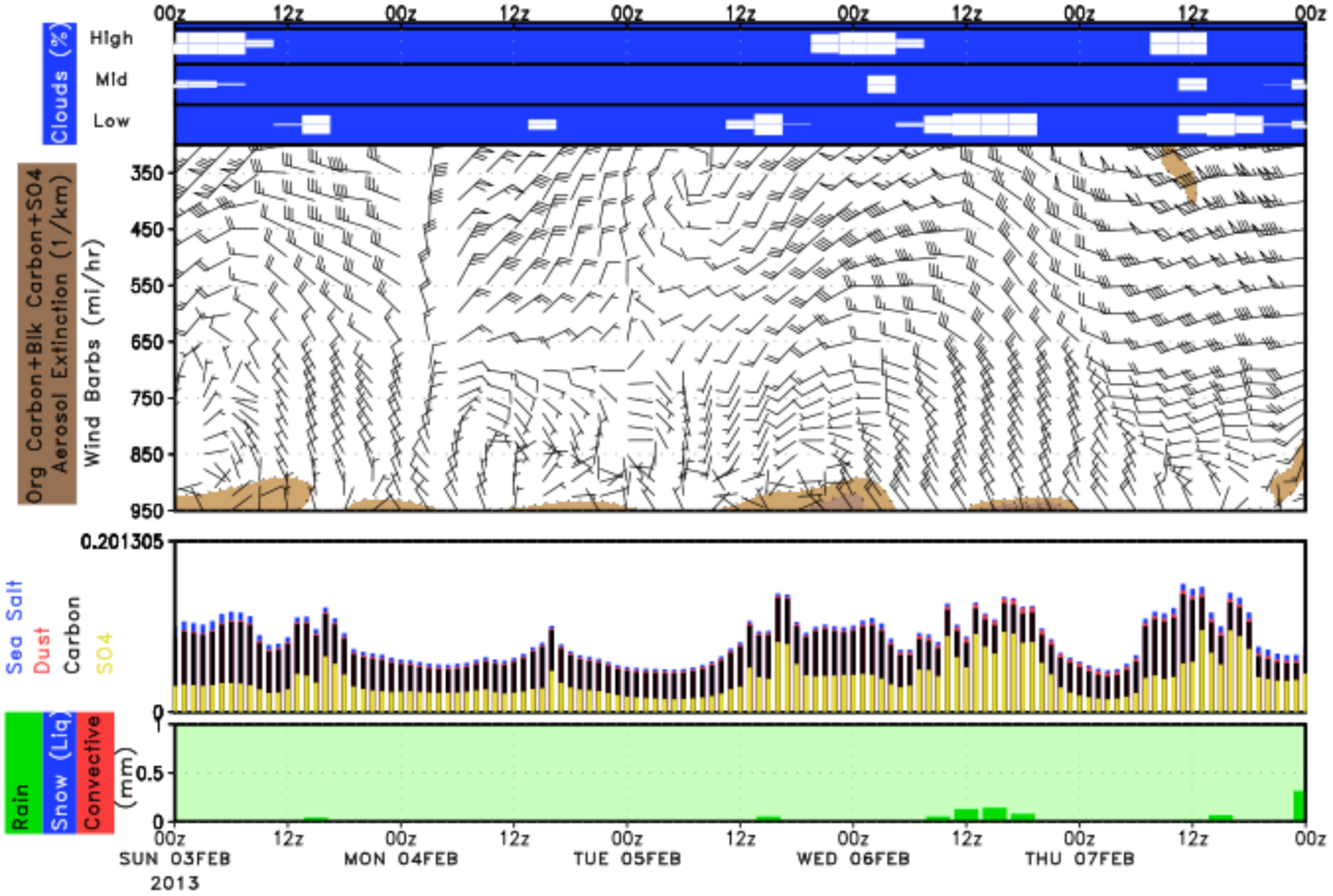
DISCOVER-AQ Sites: Hourly PM2.5 (ug/m3)



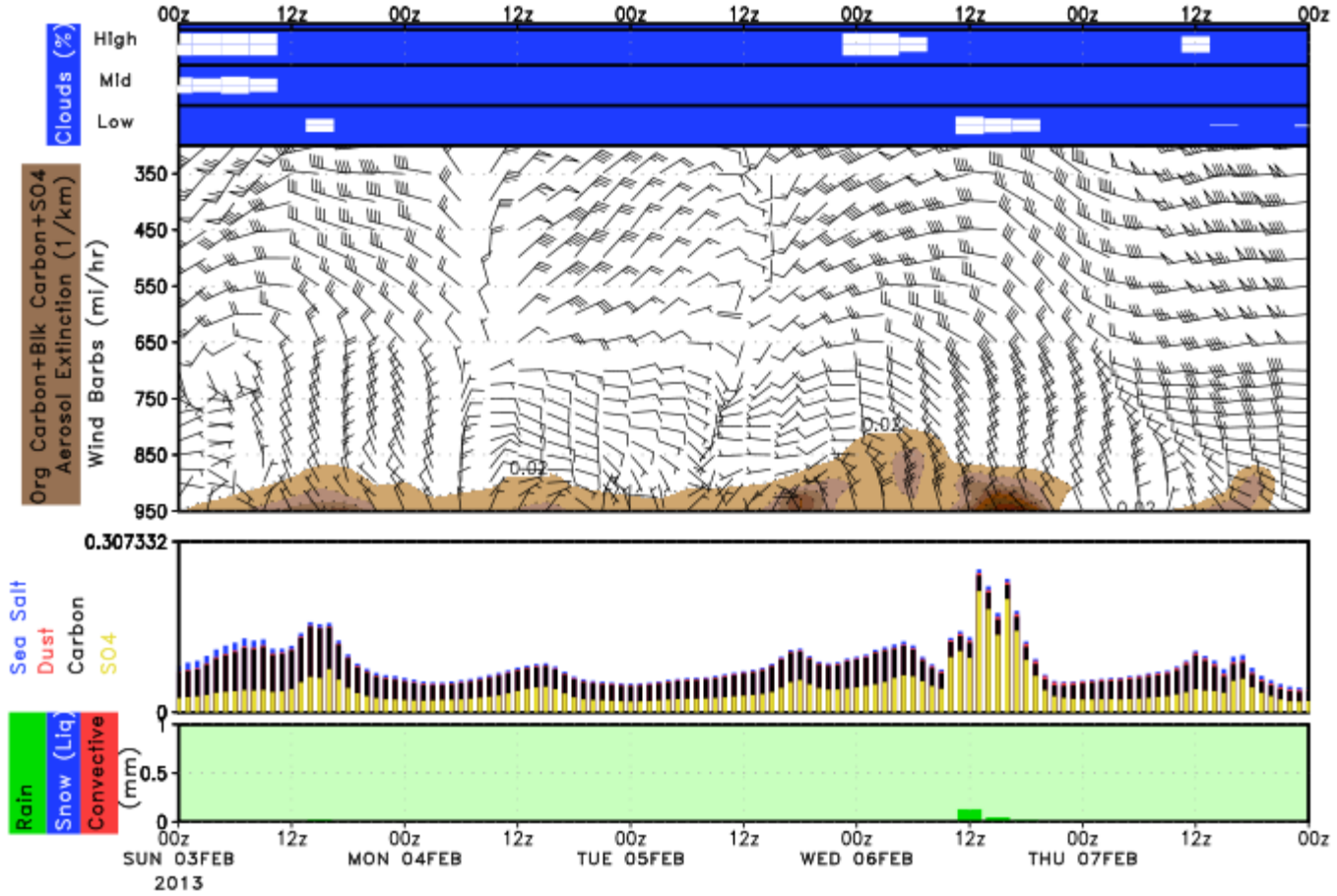
PM2.5 stayed high all day at all sites except Fresno, which popped up last evening.

midnight

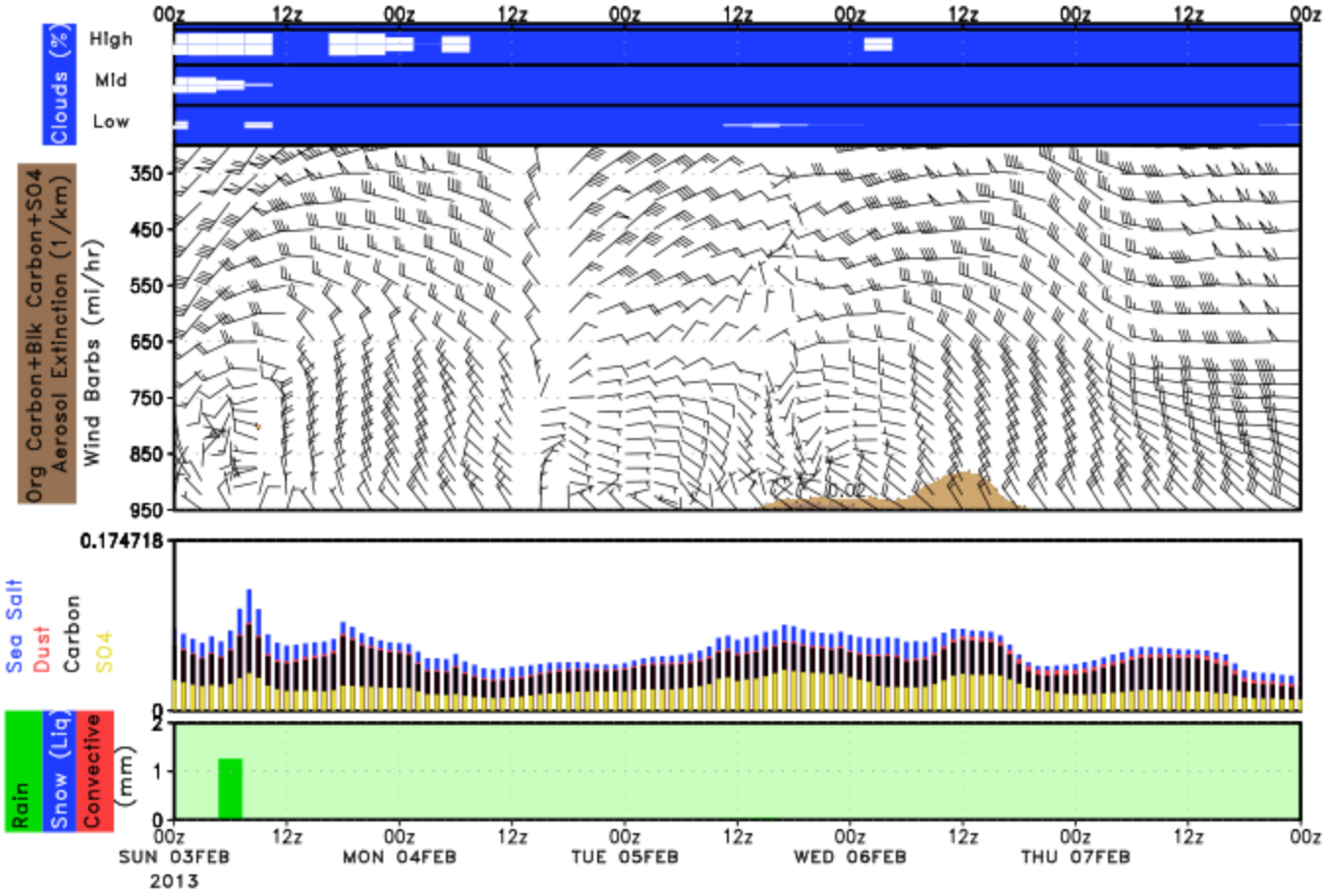
GMAO GEOS5: Fresno



GMAO GEOS5: Bakersfield



GMAO GEOS5: San Nicolas Is.



AQ Discussion Summary

1) PM2.5 levels are elevated in the SJV this weekend. Levels are expected to build through Tuesday.

2) Corcoran has surpassed the previous high (January 20th) already and Bakersfield has tied it.

3) There shouldn't be a "clean-out" event of the SJV until Wednesday or Thursday.

Recommendations

Monday

SJV – SJV region forecast to be cloud-free throughout the day. Cloud models and Hanford NWS forecaster agree. Fog will likely be an issue in the morning, similar to this morning - with high relative humidities and light winds (the GEM and GEOS5 models clearly show morning fog in the SJV). High clouds move in to the northern SJV by late afternoon (4-5 pm) and overnight.

Tuesday

SJV – Cloud models show high level clouds moving into the SJV from the north, with cirrus covering the entire valley by late afternoon. Clouds forecast to be >25 Kft. Fog again likely to be an issue in the morning.

PODEX (LA) – Low level clouds remain off the coast of LA. Cirrus forecast to be in the area during early morning, but dries out by mid-morning. However, the NWS forecaster (Oxnard) says that cirrus may remain in afternoon.

Recommendations

Wednesday

SJV – SJV region forecast to be cloud-free throughout most of the day with high level clouds moving in by late afternoon. Fog could still be a concern, but is not expected to as widespread as this morning.

PODEX (SF or LA): Main low level cloud deck has moved south of the study region, with some low clouds remaining near LA. The models also keep the coast and waters offshore of SF and LA cirrus-free.

Thursday until end of week

SJV – Clouds again move into the SJV, with the possibility of precipitation Thursday and Friday, as a trough moves offshore. Precipitation forecast highly uncertain. Clouds may remain into the weekend as the trough moves onshore and weakens.